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AUTHOR Grossman, Gary M.; And Others
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ABSTRACT

Developed in response to the need for a revision of the institutional mission statement and objectives of Western Iowa Tech Community College (WITCC) in order to respond to the changing student population, external economic factors, and local community needs, this report reviews economic and legislative issues affecting the college, describes activities of the various departmental units to address specific need areas, and presents recommendations. The introductory section identifies the following four challenges which the college must meet in the coming century: (1) establishing a comprehensive arts and sciences program; (2) maintaining a current vocational-technical curriculum; (3) developing a systematic approach to resource development; and (4) devoting more attention to appropriate student services. The next section examines economic and employment conditions of the Siouxland community, reviewing workforce trends, career placement of community college graduates, and community economic development projects. Next, the report reviews statewide policy issues affecting WITCC. The following six sections present summaries of recent planning efforts and activities at WITCC in the areas of occupational and career education; community and continuing education; arts and sciences; resource development; student services; and efforts addressing collegewide concerns. The final section presents a series of 20 recommendations suggesting, for example, that the Arts and Sciences unit be given Instructional Division status; advising and counseling services be expanded; and credit and non-credit courses be articulated throughout the college curriculum. (PAA)

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APPROACHING A COMPREHENSIVE INSTITUTIONAL PLAN FOR WESTERN IOWA TECH COMMUNITY COLLEGE: PHASE II: CREATING A NEW VISION

By

Gary M. Grossman

with

Harold Starr
Judith Edwards
Abbejean Kehler

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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FOREWORD

"Business as Usual = Death"
- Dr. Robert Dunker
Executive Vice President
Western Iowa Tech Community College

This statement by Dr. Robert Dunker became the rallying cry as this project developed. The faculty and staff of Western Iowa Tech Community College (WITCC) became clear about the challenges confronting them today and recognized that a failure to deal with them would severely cripple the ability of the college to survive in the future. Conversely, effectively addressing them opened new options and possibilities that could strengthen the college and enrich the community almost without limit. The people of WITCC realized they had a choice; and that the only way to progress was to meet and positively embrace those challenges. This report is something of a chronicle of this effort over the past year.

We say "something" because no written report can do justice to the depth of transformation that took place. The mode of engagement was experiential, not lending itself very well to the printed page. In its course, the focus of the project shifted from a rather standard planning effort where the "experts" come in to tell the college what should be done to an effort that emphasizes the empowerment of the staff to determine what and how things should be done, seizing their own futures. The "experts" became "facilitators."

As such, the careful reader will note several interesting features of this report. First, the work done early in the project is data, chart, and graph intensive. The later work emphasizes the ideas, points of view, and plans of staff themselves. While it certainly makes production of a report somewhat difficult, it fairly represents what occurred during the year.

Another feature is that the project team waxes rather enthusiastically at times about how much progress was made in the project. This is no attempt to draw attention to its own work. Rather, it is a sincere acknowledgment of the work of the staff and WITCC and the degree to which it took the opportunity and made full use of it. It was moving and important to the professional consultants participating as much as the staff seemed to enjoy it. We sincerely appreciate the opportunity.

In any project, there are too many people to thank than space permits. Certainly, the first acknowledgement must go to the college faculty and staff. Without their willingness to contribute, no project could have taken place. I would also wish to give special thanks to Dr. Robert Dunker, who provided leadership to the project team and became aware very early into the project as to what its best application would be. He was certainly correct.

On our side of the project team, I want to thank my colleagues and friends Dr. Harold Starr; Dr. Judith Edwards; and Ms. Abbejean Kehler. They are certainly reliable companions on the sometimes rocky slopes of educational innovation. In addition, I want to acknowledge the contribution of Ms. Monyeene Elliott, who coordinated the logistics of both the project team and the production of this document. It is ironic, one supposes, that the Phase I WITCC report was one of the first things Ms. Elliott did directly for me. This report, due to changing roles and responsibilities, represents one of the last things. I want to warmly thank Monyeene for the beginning, the end, and everything in between.

Finally, we want to cite the contribution of Dr. Robert Kiser, President and Founder of Western Iowa Tech Community College. Dr. Kiser started the college, built it to prominence, and made it a positive force in both the community and the community college movement as a whole. Dr. Kiser made the past 25 or so years possible and provided the vision for growth, progress, and excellence for the next quarter century. This project is dedicated to Dr. Kiser on the eve of his retirement. We wish him the very best.

Gary M. Grossman
Project Director

INTRODUCTION

INTRODUCTION TO THE PROJECT

One of the most difficult tasks facing any organization interested in determining its future, including institutions of learning, is to confront a significant change in its scope of activity. Typically, an organization seeks change out of some sense of need, a response to changing conditions. But how does one know whether any given approach is the "right" one? Further, how does one measure success, given the changing environment? The standards themselves have almost certainly changed.

This analysis is particularly appropriate in education. With an increased emphasis demanded, both internally and externally, on institutional program accountability, the tradition of courses and educational programs as end "products" in themselves may no longer be a useful consideration. Rather, other criteria may need to be considered, such as student achievement and the appropriateness of the curriculum for the community it serves.

Indeed, the community itself must be drawn into the vision of the educational enterprise itself. Thus, with respect to the interface between a college and the larger community, student achievement can principally be interpreted in terms of providing relevant and useful employment preparedness to the student "product." Educational instiutions must be aware and responsive to their markets. Indeed, community and technical colleges must be among the <u>most</u> market-sensitive of any educational environments because communities look to them first to address emerging local needs. The community college must not merely **respond** to needs, however. It must **lead** it as well. This challenge compounds the task of effectively addressing the future for this dynamic element of the educational equation.

Achieving these ends is not easy. To do so requires that the nature and composition of educational programs be flexible and of high quality in order to provide meaningful opportunities for the development of human capital. Investment in a college will come more and more from the community itself in the form of nontraditional students and interested allies, such as members of the business community. As the community invests, it does so with the intention of becoming a consumer of the "student product," a goal sharply at odds with the more traditional purpose of altruism and an end in itself. This investment, as any, must be aggressively sought by a college. Thus, no community college can afford to simply allow investors to find it. This approach, well institutionalized in higher education, are artifacts of a bygone day. Further, in seeking this investment, **it is important to remember that prospective investors are rational participants in the educational economy**. That is: (1) **students** will not engage in seeking additional education if they perceive that the **rewards** are not forthcoming in equal or greater value to all costs; and (2) **consumers** (i.e., the business community) will not reward institutions for an extended period that produce **poor student performance, poor quality programs**, and/or **irrelevant, nonproductive instruction**. From the point of view of a community college's market position today and their future, these realities are inescapable.

Fortunately, it is possible for educational agencies to review their direction and mission to ensure that they in fact provide a positive contribution to the community and maintain an appropriate leadership in educational affairs relative to other community concerns. Institutions of postsecondary education are in the business of providing education services to the community. This paper will suggest that Western Iowa Tech Community College (WITCC), through what shall be termed "cooperative co-option" and specialization through comparative advantage, can increase the choices available for students, individual teachers, administrators, and the community.

Change is necessary. In the historical circumstances of the college, it is also **highly possible**. It is at this juncture that WITCC finds itself, a position in which by making appropriate changes it may seize a dramatic and challenging opportunity for its own benefit and that of the Siouxland community. This relationship between community change in Sioux City and an improved WITCC has been noted in a number of studies, such as the recent *Sioux City Vision 2020* (Cambridge Systematics, Inc., 1991). More broadly, it has been cited concerning Iowa Community Colleges in general on several occasions in published documents (Iowa Department of Education 1991; 1990). Specific to WITCC, Grossman and Gyuro identified this prospect in an earlier version of this project (1988). Yet, while all of the studies identify the same phenomenon, the mere existence of a dynamic is not sufficient. It remains the responsibility of WITCC to forge the alliances and experience the changes it must incorporate for this mere possibility to transform into an achievable plan.

This project, conducted over the past year, is part of the college's response. It endeavors to assist in identifying the opportunity available from the challenges WITCC currently faces, and where possible, to encourage effective **action** through the implementation of new systems, new solutions, and most importantly, new ideas. It attempts to clarify the barriers to change and establish a consensus on the direction, mission, and purpose of the various component units of the college. Finally, it develops an internal alliance within the WITCC community to identify the path to effective change.

Approaching Change: Phase II

The project emerges from work performed earlier in which five key challenges that the college must meet if it is to survive and thrive in the 21st century were identified. From the Phase I report, these five areas include:

(1) The college needs to establish a comprehensive arts and sciences program at the earliest possible time.

(2) The vocational-technical education curriculum must stay current with the times and changes in the Siouxland community.

(3) A systematic approach to resource development must be created for the college to take full advantage of funding opportunities as they occur.

(4) The changing economy and population of the area provide an imperative for WITCC to devote more attention to appropriate student services, particularly with regard to student retention.

(5) There is a need for a more highly developed approach to serving high school students and their occupational needs.

As originally conceived, this project was principally intended to plan the implementation of previously defined approaches to these challenges. After its commencement, however, the leadership of the college determined that it would be of far greater value for solutions to emerge from the staff itself, after a review of the respective missions of their units, as well as their purposes and roles and the larger issues facing the college in the Siouxland community. In the process of project development, there emerged a heightened interest in ensuring that efforts in community and continuing education were aligned with changes in college as a whole, and vice versa. Accordingly, Issue 5 was considered as not germane at this time since the problems being addressed in the legislative process and recent data indicate that the number of prospective students from high schools in Iowa is expected to continue a precipitous decline. Accordingly, the project director and team shifted the emphasis from institutional to staff development and team-building as a necessary foundation for the identification and implementation of consensus approaches involving both the administration and staff. Indeed, the plan and other material in this document are direct results of the team-building processes themselves, rather than notions that originated by either the project staff or college administration.

This document summarizes what has been accomplished in the course of this project in each of these areas, beginning with an exploration of the economic and employment conditions of the Siouxland area. It will be followed by a discussion of the interface of the economy and educational system, both at the state and local levels. This analysis will establish the framework and context for the identification of how the college sees itself and the environment in which it must grow. It will be followed by summaries of project staff work in each of the four issues areas. Finally, recommendations will be presented that have been developed through direct input of the college staff.

ECONOMIC AND EMPLOYMENT CONDITIONS

ECONOMIC AND EMPLOYMENT CONDITIONS OF THE SIOUXLAND COMMUNITY

Aggressive outreach activities by the business community, the geographic location of Siouxland, and a good infrastructure of highway, rail, barge, and air transportation combined with a better than adequate educational and medical base tend to provide some attractive features for the relocation of business to the area. Further, the midwestern work ethic and the large labor pool of underemployed skilled and unskilled workers constitute an environment in which many businesses may find incentives to invest.

In addition, the state of South Dakota offers a favorable climate for business relocation or expansion due to an absence of corporate income, personal income, or personal property taxes. These incentives in South Dakota create benefits for the entire Siouxland area.

Despite this, business growth to date has been slow in Siouxland. Job creation and employment itself in the area has some encouraging signs, but there are other less positive indicators. As seen in the publication, *The Source* (published by the Iowa State Occupational Information Coordinating Committee of the Iowa Department of Economic Development), occupational data relative to Iowa is presented. From these and other data sources, a number of trends can be identified. Those most relevant to WITCC will be discussed in subsequent sections of this chapter.

WORKFORCE TRENDS

General

Slow growth in the Siouxland area economy is principally a reflection of the adjustments in recent years throughout the midwest in response to the decline and restructuring of the auto industry and disruptions/dislocations in agriculture. These declines have led to an overall decrease in skilled, higher paid manufacturing incomes and incentives to farm, as well as a net population decrease. The same is true with regard to the decline of the meat packing industry of the area. As such, the region has been hit hard in recent times by changes in the traditional industrial base of Siouxland, seriously undermining the economic foundations of the area.

Growth in the service industries has been slow as well (see table 1) and this may be attributed to: (a) restrained population growth, (b) marginal growth in personal income, and (c) constrained expansion of business services due to shrinkage of the manufacturing base. There is an indication that the trends are reversing to some extent, particularly for the Siouxland area as a whole, which show a slow growth in population and some in-migration of new population groups. This provides at least some, if limited, hope for growth in the service sector.

Housing starts are up in the past two years, and census data forecast an increase in the single, adult population, particularly minorities. Population and employment statistics will likely mirror the general trends; increases to the workforce will be derived in significant measure from minorities and women. These workers, in all likelihood, will constitute an increase of the supply of less skilled, less well-educated workers. Unless resources are targeted to address the needs these individuals have, particularly in basic skill and job retraining areas, their entry into the labor market will further depress the wage rate.

As table 1 shows, many of the occupations identified as growing numerically are doing so at only modest rates. They also represent jobs that average approximately $7 per hour. These data do not appear to promise dramatically positive shifts in labor market conditions in the near future.

Employment and Underemployment

Underemployment is the situation in which a worker with a particular set of skills accepts a job which under-utilizes those skills, netting the worker a lower income than she/he otherwise might expect. It appears to be a substantial problem in the Sioux City area that workers who possess better skills are unable to find an employer for those skills at wages comparable to other regions. The resulting wage rate for many employees is less than $7 per hour, an annual income of less than $13,500. (See inserts tables IIa and IIb, employer surveys illustrating the average wages within Woodbury and surrounding counties. Tables obtained from the Iowa Department of Employment Services.)

TABLE I *(see Table III for full listing)*

MAJOR OCCUPATIONAL GAINERS/LOSERS: *ALL OTHERS UNDER 2 PERCENT*

Occupational Title [*=service or clerical, including medical]	Percent gain of jobs	Percent loss of jobs
Metal Fabricators, struct.		-4.35
Structural Metal Workers		-4.26
Insulation Workers		-3.85
*All sales rep. and sales	3.85	
Nursing Instructors	3.45	
Underwriters	3.33	
Roofers		-3.23
All other Construction	3.23	
All other precision workers		-3.20
Millwrights		-3.12
Helpers, Carpenters & related		-3.12
Mail Machine operators, pre	3.12	
Excavating & Loading Machinery		-2.86
Veterinarians/veterinary	2.78	
Photographic Processing Mac	2.83	
Cleaning/Pickling Equipment		-2.58
*Lau. & Drycleaning Machine Operator	2.56	
Farmers, exc. Horticultural		-2.53
Extruding & forming Machinery		-2.44
Conveyer operators & tender		-2.44
*Physical Therapists	2.44	
*Legal Secretary	2.44	
*Dental Hygienists	2.38	
*Medical Record Technicians	2.38	
Brick Masons		-2.38
*All other therapists	2.35	
Helpers, Brick & Stone Mason		-2.33
*Medical/Clinical Laboratory	2.33	
*Social Workers	2.27	
Dietitians	2.27	
*Phys, & Corrective Therapy Asst.	2.27	
*Food Servers, outside	2.25	
Construction Managers		-2.25
Plumbers, Pipefitters		-2.24
*Psychiatric Aides	2.22	
*Social Service Tech.	2.22	
Carpenters		-2.21
*Maids/Housekeeping	2.18	
Lawyers	2.17	
Dentists	2.13	
Operating Engineers		-2.08
First Line Supervisors, construction		-2.04
*Medical & Health Services	2.04	
*Insurance claim clerks	2.04	
*Medical Assistants	2.00	
*Hotel Desk Clerks	2.00	
*Nursing Aides, orderlies	2.00	
Grader, dozer, scraper operator		-2.00

PLYMOUTH COUNTY, IOWA

TABLE II A

EMPLOYER SURVEY

SELECTED OCCUPATIONS	Employees	Average Wage
Professional, Technical and Managerial Occupations		
Accountant	7	$11.13
Executive Officer	8	23.06
Laboratory Tester	9	7.70
Loan Officer	17	14.93
Manager, Department	56	8.71
Manager, Office	15	8.45
Manager, Retail Store	3	11.86
Nurse, Licensed Practical	19	6.38
Nurse, Registered	52	7.84
Production Supervisor	30	10.07
Clerical Occupations		
Accounting Clerk	9	7.57
Bookkeeper	26	5.58
Cashier	4	5.83
Cashier-Checker	15	5.53
Clerk-Typist	15	4.66
Clerk, General Office	50	5.17
Computer Operator	11	5.73
Receptionist	17	5.08
Secretary	37	5.72
Secretary, Medical	6	5.90
Shipping and Receiving Clerk	4	7.04
Teller	25	5.28

SELECTED OCCUPATIONS	Employees	Average Wage
Sales Occupations		
Grocery Store Produce Department Manager	29	$ 7.03
Sales Clerk	30	4.78
Sales Representative	12	9.17
Service Occupations		
Cleaner (Or Housekeeper)	32	4.18
Cook, Institutional	25	4.40
Janitor	6	5.02
Kitchen Helper	19	4.12
Nurse Aide · Orderly	126	4.32
Washer, Machine	10	4.20
Machine Trades Occupations		
Mechanic, Diesel	17	7.63
Mechanic, Maintenance	21	11.17
Benchwork Occupations		
Sewing Machine Operator	99	4.74
Structural Work Occupations		
Building Maintenance Repairer	12	6.02
Construction Worker	79	7.65
Electrician	31	11.66
Heavy Equipment Operator	8	5.83
Miscellaneous Occupations		
Material Handler	9	6.97
Truck Driver, Heavy	20	6.50

MONONA COUNTY, IOWA

EMPLOYER SURVEY

SELECTED OCCUPATIONS	Employees	Average Wage
Professional, Technical and Managerial Occupations		
Department Manager	24	$11.05
Executive Officer	8	19.58
Loan Officer	15	13.77
Manager, Office	12	8.17
Manager, Parts	3	9.25
Nurse, Licensed Practical	22	7.85
Nurse, Registered	59	10.88
Production Supervisor	9	9.73
Clerical Occupations		
Accounting Clerk	5	6.95
Bookkeeper	18	6.59
Cashier	3	4.33
Cashier-Checker	13	3.99
Clerk, General Office	31	5.71
Computer Operator	14	5.57
Receptionist	5	5.73
Secretary	8	5.88
Shipping and Receiving Clerk	4	5.48
Teller	16	5.94
Sales Occupations		
Manager, Dept. (Retail Store)	5	4.74
Sales Clerk	35	4.45
Sales Representative	16	9.64

SELECTED OCCUPATIONS	Employees	Average Wage
Service Occupations		
Cleaner (Housekeeper)	24	$5.00
Cook, Institutional	24	5.30
Janitor	19	5.36
Kitchen Helper	26	4.20
Nurse Aide/Orderly	138	4.74
Short-Order Cook	7	6.07
Washer, Machine	14	4.90
Machine Trades Occupations		
Mechanic, Automobile	10	7.18
Mechanic, Diesel	19	7.91
Mechanic, Maintenance	5	8.58
Structural Work Occupations		
Building Maintenance Repairer	6	6.75
Carpenter	6	7.83
Construction Worker	19	7.18
Heavy Equipment Operator	28	8.06
Miscellaneous Occupations		
Material Handler	24	5.44
Tractor-Trailer Truck Driver	67	10.98
Truck Driver, Heavy	6	6.00

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WOODBURY COUNTY, IOWA

TABLE II B

EMPLOYER SURVEY

SELECTED OCCUPATIONS	Employees	Average Wage
Professional, Technical and Managerial Occupations		
Accountant	28	$10 95
Administrative Secretary	29	8 88
Computer Programmer	14	11 66
Executive Officer	41	20 98
Manager, Office	52	13 81
Manager, Retail Store	21	10 34
Medical Technologist	47	10 20
Production Supervisor	36	13 81
Social Worker	43	7 73
Technician, X-ray (Radiologist)	30	10 22
Clerical Occupations		
Accounting Clerk	77	7 59
Bookkeeper	107	7 61
Cashier-Checker	45	4 09
Clerk-Typist	65	5 83
Clerk, General Office	160	5 50
Receptionist	45	5 30
Secretary	129	6 45
Secretary, Medical	40	5 95
Shipping and Receiving Clerk	40	6 90
Teller	44	4 67
Sales Occupations		
Route Driver	31	4 31
Sales Representative	64	10 83
Salesperson	196	5 54

SELECTED OCCUPATIONS	Employees	Average Wage
Service Occupations		
Cleaner (Or Housekeeper)	128	$ 4 83
Cook, Institutional	52	4 87
Janitor	72	5 66
Kitchen Helper	59	3 77
Nurse Aide/Orderly	164	4 49
Waiter/Waitress	114	3 19
Processing Occupations		
General Laborer	82	5 44
Machine Trades Occupations		
Mechanic, Automobile	49	8 21
Mechanic, Diesel	44	8 27
Mechanic, Maintenance	41	9 54
Production Machine Operator	113	8 89
Benchwork Occupations		
Assembler, Production	32	6 79
Structural Work Occupations		
Building Maintenance Repairer	8	7 26
Supervisor, Maintenance	14	11 85
Miscellaneous Occupations		
Material Handler	41	7 81
Order Filler	29	7 59
Tractor Trailer Truck Driver	30	7 20
Truck Driver, Light	28	8 28

CHEROKEE COUNTY, IOWA

EMPLOYER SURVEY

SELECTED OCCUPATIONS	Employees	Average Wage
Professional, Technical and Managerial Occupations		
Accountant	3	$12.67
Department Manager	113	13.31
Executive Officer	27	24.98
Illustrator	22	8.01
Laboratory Tester	37	9.63
Loan Officer	20	15.21
Manager, Office	19	11.98
Manager, Parts	3	9.47
Nurse, Licensed Practical	32	7.81
Nurse, Registered	15	9.82
Production Supervisor	8	10.92
Clerical Occupations		
Accounting Clerk	9	5.31
Bookkeeper	28	7.28
Clerk-Typist	6	5.09
Clerk, General Office	82	6.86
Computer Operator	3	8.42
Receptionist	3	6.17
Secretary	14	7.60
Shipping and Receiving Clerk	3	6.10
Teller	23	6.28
Sales Occupations		
Sales Clerk, Food	6	10.58
Sales Representative	44	10.96
Service Occupations		
Cleaner (Or Housekeeper)	26	4.61
Cook, Institutional	36	5.18

SELECTED OCCUPATIONS	Employees	Average Wage
Serv. Occupations (continued)		
Janitor	8	$ 5.93
Kitchen Helper	22	4.72
Nurse Aide/Orderly	70	4.26
Washer, Machine	9	5.01
Processing Occupations		
Feed Grinder	19	6.15
General Laborer	431	9.87
Machine Trades Occupations		
Machinist	3	7.50
Mechanic, Automobile	19	8.52
Mechanic, Diesel	10	7.15
Mechanic, Maintenance	55	10.50
Production Machine Operator	289	7.68
Benchwork Occupations		
Assembler, Production	147	6.65
Painter, Spray	27	6.58
Structural Work Occupations		
Building Maintenance Repairer	6	6.85
Carpenter	9	6.92
Welder, Combination	9	7.60
Miscellaneous Occupations		
Auto-Service Station Attendant	8	6.47
Industrial Truck Driver	56	11.80
Material Handler	32	7.48
Truck Driver, Heavy	55	9.80

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Since the level of personal income is a determinant of the demand for housing and other services, the demand for and resultant market price of these items is relatively low. However, the pool of skilled, underemployed workers can potentially provide an attractive inducement to business relocation.

Without an increase in payrolls, the economic forecast remains fairly stable. It is the hope of the business community that business and Chamber of Commerce initiatives can improve those prospects. If additional businesses are enticed into the area, some of the underemployment problems will subside and more people will be attracted to the area.

Table III includes a list of occupations in the WITCC area as well as total openings and projected growth or decline through 1991. The listing is set in descending order as to average annual number of openings and the resultant percentages.

Career Placement

The major employers of WITCC graduates, according to the college's information, includes: St. Lukes, Marion, IBP, Pioneer Telemarketing, Gateway 2000, Prince Manufacturing, First Federal Savings Loan, First National Bank, Motorola, and Ford. Another item of note includes the observation identified through discussions with staff that many women enrolled in nontraditional training programs tend to be ultimately employed in jobs outside of that training area upon graduation. This could be, of course, a comment both upon the relative appropriateness of instructional programs and the nature of the local labor market. While support for this assertion is anecdotal and not the result of a thorough analysis of data, it is also interesting that a more complete database with which to dispute this finding is not available, either in the community or at the college. Insofar as available evidence seems to suggest this, however, career counselors at WITCC should aggressively be seeking this type of information in order to better serve students. Training students for jobs unavailable to them is a serious problem for both the student and institution, and ultimately, the community. Nothing will "sell" the development of the institution as much as demonstrable success. Certainly, resources should be allocated for documenting matters of this importance.

In addition to "natural" labor market processes, Siouxland has several community economic development programs underway. These will be reviewed and project staff will comment upon them.

In the data collection process, a number of sources of information were obtained. Project staff interviewed a number of persons locally and at the state level to obtain data pertinent to this section of the report. A list of interviewees is found in exhibit 1. Exhibit 2 lists major employers in Siouxland as of October 1989.

TABLE III

LISTING OF OCCUPATIONS IN MERGED AREA COMMUNITY COLLEGE 12
Total Openings (growth + replacement)
1988 - 1992
Source: Iowa Occupational Information Network

OES Code	Occupational Title	Employment Level 1988	Employment Level 1992	Average Change 1988-92 (+ or -)	Average Replacement Needs 1988-92	Average Annual Openings 1988-92	Ave. Annual Percent Change 1988-1992	Area-type
49011261	SALESPERSONS, RETAIL	2315	2352	9	144	153	0.39	2
67005376	JANITORS AND CLEANERS	1280	1344	16	111	127	1.25	2
90000473	FARMERS, EXC HORTICULTURAL	5365	4819	-136	256	120	-2.53	2
19005016	GENERAL MANAGERS AND TOP EXE	2292	2337	11	95	106	0.48	2
90000479	FARM WORKERS	2031	2084	13	86	99	0.64	2
66008401	NURSING AIDES, ORDERLIES, AN	1302	1405	26	60	86	2.00	2
55338305	BOOKKEEPING, ACCOUNTING, AND	1376	1407	8	67	75	0.58	2
32502160	REGISTERED NURSES	1679	1801	30	43	73	1.79	2
55347357	GENERAL OFFICE CLERKS	1335	1373	10	60	70	0.75	2
49021263	STOCK CLERKS, SALES FLOOR	1052	1068	4	57	61	0.38	2
65038390	FOOD PREPARATION WORKERS	834	871	9	48	57	1.08	2
49023254	CASHIERS	1803	1844	10	46	56	0.55	2
55199345	ALL OTHER SECRETARIES	1464	1509	11	40	51	0.75	2
67002377	MAIDS AND HOUSEKEEPING CLEAN	458	498	10	38	48	2.18	2
97102843	TRUCK DRIVERS, HEAVY OR TRAC	1556	1529	-7	49	42	-0.45	2
65008392	WAITERS AND WAITRESSES	1470	1512	10	30	40	0.68	2
65028383	COOKS, INSTITUTION OR CAFETE	508	537	7	32	39	1.38	2
31305114	TEACHERS, ELEMENTARY	948	984	9	29	38	0.95	2
63047453	GUARDS	279	296	4	29	33	1.43	2
31308117	TEACHERS, SECONDARY SCHOOL	1038	1078	10	22	32	0.96	2
65032387	COOKS, SPECIALTY FAST FOOD	460	468	2	29	31	0.43	2
55305310	RECEPTIONISTS AND INFORMATIO	451	481	8	22	30	1.77	2
49008269	OTHER SALES REPRESENTATIVES,	710	711	0	30	30	0.00	2
92717748	SEWING MACHINE OPERATORS, GA	560	558	0	30	30	0.00	2
65041389	FOOD PREPARATION AND SERVICE	685	700	4	23	27	0.58	2
61008457	HOUSEKEEPERS, INSTITUTIONAL	119	127	2	25	27	1.68	2
51002369	FIRST LINE SUPERVISORS AND M	689	705	4	22	26	0.58	2
79014474	GARDENERS AND GROUNDSKEEPERS	190	202	3	22	25	1.58	2
99999907	ALL OTH. HELPERS, LABOR., AN	1089	1080	-2	27	25	-0.18	2
65026384	COOKS, RESTAURANT	364	374	2	23	25	0.55	2
65005381	BARTENDERS	426	440	4	20	24	0.94	2
90000475	MANAGERS, FARM EXEC HORT	428	439	3	21	24	0.70	2
41002268	FIRST LINE SUPERVISORS AND M	430	439	2	22	24	0.47	2
85132585	MAINTENANCE REPAIRERS, GENER	727	727	0	23	23	0.30	2
32505198	LICENSED PRACTICAL NURSES	528	570	10	13	23	1.89	2
32102159	PHYSICIANS AND SURGEONS	227	243	4	18	22	1.76	2
61099466	ALL OTH. SERV. SUPERVISORS A	300	315	4	17	21	1.33	2
97111838	BUS DRIVERS, SCHOOL	318	330	3	18	21	0.94	2
21114025	ACCOUNTANTS AND AUDITORS	473	494	5	15	20	1.06	2
97105842	TRUCK DRIVERS, LIGHT, INCL.	522	523	0	19	19	0.00	2
92726746	LAU. AND DRYCL. MACH. OPER.	156	171	4	14	18	2.56	2
68005412	HAIRDRESSERS, HAIRSTYLISTS,	320	345	6	12	18	1.88	2
19999009	ALL OTHER MANAGERS AND ADMIN	324	337	3	13	16	0.93	2
25302593	AUTOMOTIVE MECHANICS	391	402	3	13	16	0.77	2
58023327	STOCK CLERKS, STOCKROOM, WA	416	422	2	14	16	0.48	2

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Total Openings (growth + replacement)
1988 - 1992
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OES Code	Occupational Title	Employment Level 1988	Employment Level 1992	Average Change 1988-92 (+ or -)	Average Replacement Needs 1988-92	Average Annual Openings 1988-92	Ave. Annual Area-Percent type Change 1988-1992
15026006	FOOD SERVICE AND LODGING MAN	298	307	2	13	15	0.67 2
66011418	HOME HEALTH AIDES	185	198	3	12	15	1.62 2
67099464	ALL OTHER CLEAN. AND BLDG. S	153	159	2	13	15	1.31 2
13002015	FINANCIAL MANAGERS	350	362	3	11	14	0.86 2
53102366	TELLERS	395	416	5	9	14	1.27 2
65099393	ALL OTHER FOOD SERVICE WORKE	236	249	3	11	14	1.27 2
28108110	LAWYERS	138	150	3	10	13	2.17 2
49999265	ALL OTHER SALES AND RELATED	256	259	1	12	13	0.39 2
55308348	TYPISTS	321	335	4	9	13	1.25 2
31321139	INSTRUCTORS AND COACHES, SPO	172	183	3	10	13	1.74 2
31314140	TEACHERS AND INSTRUCTORS, VO	181	189	2	10	12	1.10 2
31399141	ALL OTHER TEACHERS AND INSTR	172	181	2	10	12	1.16 2
49017255	COUNTER AND RENTAL CLERKS	157	168	3	9	12	1.91 2
31521365	TEACHER AIDES, PARAPROFESSIO	183	190	2	10	12	1.09 2
65014388	DIN. RM. AND CAFET. ATTENDAN	329	341	3	8	11	0.91 2
49014273	SALESPERSONS, PARTS	291	293	0	11	11	0.01 2
87711524	HIGHWAY MAINTENANCE WORKERS	290	300	2	9	11	0.69 2
53905364	TEACHER AIDES AND EDUC. ASSI	257	269	3	7	10	1.17 2
58028328	TRAFFIC, SHIPPING, AND RECEI	357	356	0	10	10	0.00 2
68038410	CHILD CARE WORKERS	208	225	4	6	10	1.92 2
27311102	RECREATION WORKERS	151	162	3	7	10	1.99 2
27305105	SOCIAL WORKERS, EXCEPT MEDIC	227	242	4	6	10	1.76 2
31311144	TEACHERS, SPECIAL EDUCATION	235	244	2	7	9	0.85 2
57305317	POSTAL MAIL CARRIERS	211	214	1	8	9	0.47 2
98902905	HAND PACKERS AND PACKAGERS	493	480	-3	12	9	-0.61 2
31502148	LIBRARIANS, PROFESSIONAL	119	123	1	8	9	0.84 2
43002256	INSURANCE SALES WORKERS	133	139	2	7	9	1.50 2
97805861	SERVICE STATION ATTENDANTS	245	251	2	7	9	0.82 2
15005013	EDUCATION ADMINISTRATORS	204	212	2	6	8	0.98 2
57102291	SWITCHBOARD OPERATORS	164	173	2	6	8	1.22 2
89802629	SLAUGHTERERS AND BUTCHERS	1103	1038	-16	24	8	-1.45 2
81002501	FIRST LINE SUPERVISORS, MECH	317	318	0	8	8	0.00 2
21108046	LOAN OFFICERS AND COUNSELORS	166	176	2	6	8	1.20 2
59999367	ALL OTHER CLERICAL AND ADMIN	175	181	2	6	8	1.14 2
69999458	ALL OTHER SERVICE WORKERS	75	80	1	7	8	1.33 2
32517156	PHARMACISTS	117	120	1	6	7	0.85 2
15011022	PROPERTY AND REAL EST. MANAG	51	55	1	6	7	1.96 2
81008502	FIRST LINE SUPERVISORS, PROD	347	337	-2	9	7	-0.58 2
55105344	MEDICAL SECRETARIES	149	160	3	4	7	2.01 2
68014407	AMUSEMENT AND RECREATION ATT	126	135	2	5	7	1.59 2
65002391	HOSTS AND HOSTESSES, REST./L	118	121	1	6	7	0.85 2
27308419	SOCIAL SERVICE TECHNICIANS	135	147	3	4	7	2.22 2
93956913	ALL OTHER ASSEMBLERS AND FAB	475	463	-3	10	7	-0.63 2
98799903	ALL OTHER FREIGHT, STOCK, AN	494	485	-2	9	7	-0.40 2
66099465	ALL OTHER HEALTH SERVICE WOR	65	70	1	6	7	1.54 2

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55102343	LEGAL SECRETARIES	123	135	3	4	7	2.44	2
21511034	PERSONNEL, TRAINING, AND LAB	195	205	2	5	7	1.03	2
49005274	SALES REP., SCI. PROD. AND S	169	167	0	7	7	-0.01	2
13014010	ADMINISTRATIVE SERVICES MANA	125	130	1	5	6	0.80	2
15008019	MEDICINE AND HEALTH SERVICES	98	105	2	4	6	2.04	2
15002007	POSTMASTERS AND MAIL SUPERIN	69	70	0	6	6	0.01	2
65017394	COUNTER ATTENDANTS, LUNCHRM.	309	317	2	4	6	0.65	2
15023011	COMMUN., TRANSP., AND UTIL.	151	151	0	6	6	0.00	2
39999247	ALL OTHER PROF., PARAPROF.,	182	189	2	4	6	1.10	2
63032448	SHERIFFS AND DEPUTY SHERIFFS	46	47	0	6	6	0.02	2
66005399	MEDICAL ASSISTANTS	100	108	2	4	6	2.00	2
53808308	HOTEL DESK CLERKS	50	54	1	4	5	2.00	2
55344303	BILLING, COST, AND RATE CLER	217	222	1	4	5	0.46	2
31317138	INSTRUCTORS, ADULT (NONVOCAT	67	72	1	4	5	1.49	2
85321596	FARM EQUIPMENT MECHANICS	137	136	0	5	5	-0.01	2
68035420	SOCIAL WELFARE SERVICE AIDES	60	64	1	4	5	1.67	2
83005671	PROD. INSPECTORS, TESTERS, G	283	271	-3	8	5	-1.06	2
53902337	LIBRARY ASSISTANTS AND BOOKM	109	113	1	4	5	0.92	2
53123278	ADJUSTMENT CLERKS	97	103	2	3	5	2.06	2
43014262	SECURITIES AND FINANCIAL SER	78	83	1	4	5	1.28	2
13005021	PERSONNEL, TRAINING, AND LAB	111	118	2	3	5	1.80	2
13011018	MARKETING, ADVERTISING, AND	214	214	0	5	5	-0.50	2
89505653	CUSTOM TAILORS AND SEWERS	42	43	0	5	5	0.02	2
32105152	DENTISTS	47	50	1	4	5	2.13	2
65021380	BAKERS, BREAD AND PASTRY	89	90	0	5	5	0.01	2
85311595	BUS AND TRUCK MECHANICS AND	217	217	0	5	5	-0.50	2
32902201	MEDICAL AND CLINICAL LABORAT	126	134	2	2	4	1.59	2
32999208	ALL OTHER HEALTH PROF. AND P	124	132	2	2	4	1.61	2
27302104	SOCIAL WORKERS, MEDICAL AND	88	96	2	2	4	2.27	2
63017430	CORRECTION OFFICERS AND JAIL	111	115	1	3	4	0.90	2
34031178	MUSICIANS, INSTRUMENTAL	58	62	1	3	4	1.72	2
53314284	INSURANCE POLICY PROCESSING	87	91	1	3	4	1.15	2
31302113	TEACHERS, PRESCHOOL AND KIND	166	175	2	2	4	1.20	2
66002398	DENTAL ASSISTANTS	102	112	2	2	4	1.96	2
98102908	MECHANIC AND REPAIRER HELPER	73	73	0	4	4	1.40	2
13008023	PURCHASING MANAGERS	205	207	0	4	4	0.01	2
21999042	ALL OTHER MANAGEMENT SUPPORT	135	138	1	3	4	0.74	2
85999619	ALL OTHER MECHANICS, INSTALL	93	96	1	3	4	1.08	2
85305591	AUTOMOTIVE BODY AND RELATED	116	122	2	2	4	1.72	2
65023628	BUTCHERS AND MEATCUTTERS	166	168	0	4	4	0.01	2
31218123	ART, DRAMA & MUSIC TEACHERS	54	57	1	3	4	1.85	2
31517142	INSTRUCTIONAL COORDINATORS	58	61	1	3	4	1.72	2
55321336	FILE CLERKS	110	115	1	3	4	0.91	2
19002008	PUB. ADMIN. EX. EXEC., LEGIS	58	60	0	4	4	0.03	2
55311349	TYPISTS, WORD PROCESSING EQU	111	114	1	3	4	0.50	2

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DES Code	Occupational Title	Employment Level 1988	Employment Level 1992	Average Change 1988-92 (+ or -)	Average Replacement Needs 1988-92	Average Annual Openings 1988-92	Ave. Annual Percent Change 1988-1992	Area-type
85723570	ELECTRICAL POWERLINE INSTALL	183	183	0	4	4	0.00	2
63044451	CROSSING GUARDS	28	27	0	4	4	-0.04	2
97108837	BUS DRIVERS	57	60	1	3	4	1.75	2
32521153	DIETITIANS AND NUTRITIONISTS	44	47	1	3	4	2.27	2
95002827	WATER AND LIQ. WASTE TREAT.	74	77	1	3	4	1.35	2
58026324	ORDER FILLERS, WHOLESALE AND	113	112	0	4	4	-0.01	2
55323338	ORDER CLERKS, MATERIALS, MER	129	128	0	4	4	-0.01	2
87102512	CARPENTERS	272	249	-6	10	4	-2.21	2
15014017	INDUSTRIAL PRODUCTION MANAGE	95	93	0	4	4	-0.02	2
97947867	INDUSTRIAL TRUCK AND TRACTOR	337	330	-2	6	4	-0.59	2
32114169	VETERINARIANS AND VETERINARY	36	39	1	2	3	2.78	2
34038174	DESIGNERS, EXCEPT INTERIOR D	75	79	1	2	3	1.33	2
92728747	PRESS. MACH. OPER. AND TEND.	40	42	0	3	3	0.05	2
21111040	TAX PREPARERS	51	56	1	2	3	1.96	2
55302346	STENOGRAPHERS	52	55	1	2	3	1.92	2
63014442	POLICE PATROL OFFICERS	147	152	1	2	3	0.68	2
31505242	TECHNICAL ASSISTANTS, LIBRAR	39	41	0	3	3	0.05	2
53121358	LOAN AND CREDIT CLERKS	66	69	1	2	3	1.52	2
22502212	CIVIL ENGINEERING TECHNICIAN	103	106	1	2	3	0.97	2
98905906	VEHICLE WASHERS AND EQUIPMEN	172	174	0	3	3	0.01	2
66017405	PHYS. AND CORRECT. THERAPY A	44	47	1	2	3	2.27	2
56017355	DATA ENTRY KEYERS, EXC. COMP	167	172	1	2	3	0.60	2
49026275	VENDORS, SOLICITORS, AND REL	50	53	1	2	3	2.00	2
13017014	ENGINEERING, MATH & NATURAL	63	65	0	3	3	0.03	2
43099266	ALL OTHER SALES REP. AND SAL	26	29	1	2	3	3.85	2
31514149	COUNSELORS	85	90	1	2	3	1.18	2
34008183	PUBLIC REL. SPECIALISTS AND	48	50	0	3	3	0.04	2
55332370	INTERVIEWING CLERKS, EXC. PE	71	76	1	2	3	1.41	2
32905200	MEDICAL AND CLINICAL LABORAT	86	93	2	1	3	2.33	2
53302280	INS. ADJUSTERS, EXAMINERS, A	72	76	1	2	3	1.39	2
56011295	COMPUTER OPERATORS, EXC. PER	146	153	2	1	3	1.37	2
53105309	NEW ACCOUNTS CLERKS	59	63	1	2	3	1.69	2
32399167	ALL OTHER THERAPISTS	85	91	2	1	3	2.35	2
66014402	PSYCHIATRIC AIDES	45	48	1	2	3	2.22	2
21911028	COMPLIANCE AND ENFORCE. INSP	60	62	0	3	3	0.03	2
65011395	FOOD SERVERS, OUTSIDE	89	96	2	1	3	2.25	2
21302038	WHOLESALE AND RETAIL BUYERS,	96	97	0	3	3	0.01	2
32508197	EMERGENCY MEDICAL TECHNICIAN	81	86	1	2	3	1.23	2
65035386	COOKS, SHORT ORDER	181	184	1	2	3	0.55	2
97117841	DRIVER/SALES WORKERS	162	159	-1	4	3	-0.62	2
89108639	MACHINISTS	170	170	0	3	3	-0.60	2
57308318	POSTAL SERVICE CLERKS	86	87	0	3	3	0.01	2
43023270	SALES AGENTS, ADVERTISING	58	59	0	3	3	0.02	2
85905615	PRECISION INSTRUMENT REPAIRE	17	17	0	3	3	0.00	2
58008326	PRODUCTION, PLANNING, AND EX	77	77	0	3	3	0.00	2

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98705902	REFUSE COLLECTORS	80	81	0	3	3	0.01	2
43021264	TRAVEL AGENTS	53	54	0	3	3	0.02	2
93999815	ALL OTHER HAND WORKERS	104	104	0	3	3	0.00	2
34002190	WRITERS AND EDITORS	64	63	0	3	3	-0.02	2
55335354	CUSTOMER SERVICE REPRESENTAT	101	102	0	3	3	0.01	2
92998782	ALL OTHER MACHINE OPERATORS	152	151	0	3	3	-0.01	2
85911603	ELECTRIC METER INSTALLERS AN	16	16	0	3	3	0.00	2
87402526	PAINTERS AND PAPERHANGERS, C	86	82	-1	4	3	-1.16	2
93914812	WELDERS AND CUTTERS	200	199	0	3	3	-0.01	2
85711607	ELECTRIC HOME APPL. AND POWE	32	34	0	2	2	0.06	2
25102076	COMPUTER SYSTEMS ANALYSTS, E	107	110	1	1	2	0.93	2
43017271	SALES AGENTS, SELECTED BUSIN	72	74	0	2	2	0.03	2
39011245	FUNERAL DIRECTORS AND MORTIC	25	27	0	2	2	0.08	2
53508279	BILL AND ACCOUNT COLLECTORS	39	41	0	2	2	0.05	2
58021332	MARKING CLERKS	42	44	0	2	2	0.05	2
83099673	ALL OTHER INSPECTORS, TESTER	45	46	0	2	2	0.02	2
56008301	MAIL MACHINE OPERATORS, PREP	32	35	1	1	2	3.12	2
97114839	TAXI DRIVERS AND CHAUFFEURS	26	27	0	2	2	0.04	2
53311282	INSURANCE CLAIMS CLERKS	49	52	1	1	2	2.04	2
56002304	BILLING, POSTING, AND CALC.	75	77	0	2	2	0.03	2
68041461	FUNERAL ATTENDANTS	19	21	0	2	2	0.11	2
66026404	PHARMACY ASSISTANTS	58	60	0	2	2	0.03	2
22121054	CIVIL ENGINEERS, INCLUDING T	60	62	0	2	2	0.03	2
22599216	ALL OTHER ENGINEERING TECHNI	54	57	1	1	2	1.85	2
63035452	DETECTIVES AND INVESTIGATORS	24	25	0	2	2	0.04	2
31210132	SOCIAL SCIENCE TEACHERS	53	55	0	2	2	0.04	2
28305235	PARALEGAL PERSONNEL	35	37	0	2	2	0.06	2
32917206	RADIOLOGIC TECHNOLOGISTS	57	61	1	1	2	1.75	2
21102041	UNDERWRITERS	30	33	1	1	2	3.33	2
21308037	PURCHASING AGENTS, EXC. WH.,	60	59	0	2	2	-0.02	2
92935764	CHEMICAL EQUIP. CONTROLLERS	70	69	0	2	2	-0.01	2
58099331	ALL OTH. MAT. REC., SCHED.,	35	36	0	2	2	0.03	2
21917026	ASSESSORS	33	34	0	2	2	0.03	2
79011475	GRADERS AND SORTERS, AGRICUL	17	16	0	2	2	-0.06	2
32308163	PHYSICAL THERAPISTS	41	44	1	1	2	2.44	2
58014323	METER READERS, UTILITIES	78	79	0	2	2	0.01	2
81011503	FIRST LINE SUPER., TR./MAT.	82	81	0	2	2	-0.01	2
21914039	TAX EXAMINERS, COLLECTORS, A	40	41	0	2	2	0.03	2
81017500	FIRST LINE SUPERVISORS, HELP	49	48	0	2	2	-0.02	2
55341306	PAYROLL AND TIMEKEEPING CLER	68	67	0	2	2	-0.01	2
22505213	ELECTRICAL AND ELECTRONIC TE	110	108	0	2	2	-0.02	2
92908778	PHOTOGRAPHIC PROCESSING MACH	38	42	1	1	2	2.63	2
58005321	DISPATCHERS, EXC. POLICE, FI	96	96	0	2	2	0.00	2
93935799	CANNERY WORKERS	83	78	-1	3	2	-1.20	2
89102643	TOOL AND DIE MAKERS	66	66	0	2	2	0.00	2

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57311316	MESSENGERS	27	27	0	2	2	0.00	2
85953617	TIRE REPAIRERS AND CHANGERS	76	76	0	2	2	0.00	2
21305048	PURCHASING AGENTS AND BUYERS	65	62	-1	3	2	-1.54	2
95032826	STATIONARY ENGINEERS	74	71	-1	3	2	-1.35	2
34011187	REPORTERS AND CORRESPONDENTS	46	45	0	2	2	-0.02	2
27108095	PSYCHOLOGISTS	54	58	1	1	2	1.85	2
95008822	CHEMICAL PLANT AND SYSTEM OP	61	61	0	2	2	0.00	2
21508033	EMPLOY. INTERVIEWERS, PVT. O	55	58	1	1	2	1.82	2
85902605	HEAT., A/C, AND REFRIG. MECH	99	95	-1	3	2	-1.01	2
32928207	SURGICAL TECHNICIANS	52	56	1	1	2	1.92	2
87202520	ELECTRICIANS	194	183	-3	5	2	-1.55	2
63008432	FIRE FIGHTERS	110	115	1	1	2	0.91	2
32108155	OPTOMETRISTS	18	20	0	2	2	0.11	2
81099504	ALL OTHER FIRST LINE SUPV. P	65	65	0	2	2	0.00	2
95099829	ALL OTHER PLANT AND SYSTEM O	62	62	0	2	2	0.00	2
92965767	CRUSHING AND MIXING MACH. OP	152	145	-2	4	2	-1.32	2
87508527	PIPELAYERS	55	53	0	2	2	-0.04	2
49032267	DEMONSTRATORS, PROMOTERS, AN	17	18	0	1	1	0.06	2
53702351	COURT CLERKS	14	15	0	1	1	0.07	2
34023181	PHOTOGRAPHERS	28	29	0	1	1	0.04	2
53705359	MUNICIPAL CLERKS	37	38	0	1	1	0.03	2
89111645	TOOL GRINDERS, FILERS, SHARP	22	23	0	1	1	0.05	2
32302165	RESPIRATORY THERAPISTS	34	36	0	1	1	0.06	2
31114143	NURSING INSTRUCTORS	29	32	1	0	1	3.45	2
31294134	ALL OTHER POSTSECONDARY TEAC	91	95	1	0	1	1.10	2
31216127	ENGLISH & FOREIGN LANGUAGE T	54	56	0	1	1	0.04	2
25105232	COMPUTER PROGRAMMERS	124	126	0	1	1	0.02	2
31224130	MATHEMATICAL SCIENCE TEACHER	27	29	0	1	1	0.07	2
31206131	PHYSICS TEACHERS	9	10	0	1	1	0.11	2
55328362	STATISTICAL CLERKS	30	32	0	1	1	0.07	2
32908193	DENTAL HYGIENISTS	42	46	1	0	1	2.38	2
85926614	OFFICE MACHINE AND CASH REGI	44	45	0	1	1	0.02	2
89514660	SPOTTERS, DRY CLEANING	11	12	0	1	1	0.09	2
31117137	GRADUATE ASSISTANTS, TEACHIN	22	24	0	1	1	0.09	2
21905047	MANAGEMENT ANALYSTS	20	21	0	1	1	0.05	2
68002409	BARBERS	6	7	0	1	1	0.17	2
24305078	AGRICULTURAL AND FOOD SCIENT	19	21	0	1	1	0.11	2
53502286	WELFARE ELIGIBILITY WORKERS	92	94	0	1	1	0.02	2
85708572	ELECTRONIC HOME ENTERTAINMEN	34	35	0	1	1	0.03	2
31222126	ENGINEERING TEACHERS	16	17	0	1	1	0.06	2
34041251	INTERIOR DESIGNERS	21	22	0	1	1	0.05	2
56014296	PERIPHERAL EDP EQUIPMENT OPE	27	29	0	1	1	0.07	2
56099300	ALL OTHER OFFICE MACHINE OPE	42	43	0	1	1	0.02	2
68021421	USHERS, LOBBY ATTENDANTS, AN	24	26	0	1	1	0.08	2
85119583	ALL OTHER MACHINERY MAINTENA	19	20	0	1	1	0.05	2

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79017473	ANIMAL CARETAKERS, EXCEPT FA	32	33	0	1	1	0.03	2
21117043	BUDGET ANALYSTS	15	16	0	1	1	0.07	2
55314339	PERSONNEL CLERKS, EXC. PAYRO	32	34	0	1	1	0.06	2
24302080	FORESTERS AND CONSERVATION S	21	22	0	1	1	0.05	2
32921205	RADIOLOGIC TECHNICIANS	44	46	0	1	1	0.05	2
58002322	DISPATCHERS, POLICE, FIRE, A	50	51	0	1	1	0.02	2
90000477	SUPERVISORS, FARM WORKERS	31	32	0	1	1	0.03	2
57302315	MAIL CLERKS, EXC. MAIL MACH.	33	35	0	1	1	0.06	2
57108289	CENTRAL OFFICE OPERATORS	20	20	0	1	1	0.00	2
28399239	ALL OTHER LEGAL ASSISTANTS A	19	19	0	1	1	0.00	2
58017330	WEIGHERS, MEAS., CHECK., AND	17	17	0	1	1	0.00	2
32111157	PODIATRISTS	4	4	0	1	1	0.00	2
53126340	STATEMENT CLERKS	27	29	0	1	1	0.07	2
32911202	MEDICAL RECORDS TECHNICIANS	42	45	1	0	1	2.38	2
53805312	RESERVATION AND TRANSPORTATI	73	73	0	1	1	0.00	2
80002899	LAWN SERV. WKRS & TREE TRIM.	18	20	0	1	1	0.11	2
28105108	ADJUDICATORS, HEAR. OFFICERS	9	9	0	1	1	0.00	2
89517659	PRESSERS, DELICATE FABRICS	17	19	0	1	1	0.12	2
27502100	CLERGY	11	13	0	1	1	0.18	2
28302234	LAW CLERKS	17	19	0	1	1	0.12	2
28311237	TITLE EXAMINERS AND ABSTRACT	11	11	0	1	1	0.00	2
32514154	OPTICIANS, DISPENSING AND ME	56	58	0	1	1	0.04	2
79002490	FOREST AND CONSERVATION WORK	52	54	0	1	1	0.04	2
87999557	ALL OTHER CONSTRUCTION AND E	31	34	1	0	1	3.23	2
32523194	DIETETIC TECHNICIANS	13	13	0	1	1	0.00	2
31323136	FARM AND HOME MANAGEMENT ADV	18	18	0	1	1	0.00	2
63021446	PARKING ENFORCEMENT OFFICERS	5	5	0	1	1	0.00	2
92541739	TYPESETTING AND COMPOSING MA	21	22	0	1	1	0.05	2
34028229	BROADCAST TECHNICIANS	27	27	0	1	1	0.00	2
43011260	REAL ESTATE APPRAISERS	15	16	0	1	1	0.07	2
63099454	ALL OTHER PROTECTIVE SERVICE	95	100	1	0	1	1.05	2
66023397	AMBULANCE DRIVERS AND ATTEND	19	19	0	1	1	0.00	2
15017012	CONSTRUCTION MANAGERS	89	80	-2	3	1	-2.25	2
87502530	PLUMBERS, PIPEFITTERS, AND S	134	123	-3	4	1	-2.24	2
97938871	GRADER, DOZER, AND SCRAPER O	50	45	-1	2	1	-2.00	2
85110577	INDUSTRIAL MACHINERY MECHANI	122	118	-1	2	1	-0.82	2
22128056	INDUSTRIAL ENGINEERS, EXCEPT	34	32	0	1	1	-0.06	2
89502654	PATTERNMAKERS AND LAYOUT WOR	17	17	0	1	1	0.00	2
95021831	POWER GEN. PLANT OPER., EXC.	26	26	0	1	1	0.00	2
91502686	NUM. CONT. MACH. TOOL OP. AN	48	47	0	1	1	-0.02	2
91321696	MACHINE FORMING OP. AND TEND	38	37	0	1	1	-0.03	2
34017195	ANNOUNCERS, RADIO AND TELEVI	82	81	0	1	1	-0.01	2
92543733	PRINTING PRESS MACH. OPERATO	52	51	0	1	1	-0.02	2
92974774	PACKAGING AND FILLING MACH.	352	333	-5	6	1	-1.42	2
98502900	MACHINE FEEDERS AND OFFBEARE	162	155	-2	3	1	-1.23	2

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89311662	CABINETMAKERS AND BENCH CARP	17	16	0	1	1	-0.06	2
89308665	WOOD MACHINISTS	14	13	0	1	1	-0.07	2
87714531	RAIL-TRACK LAYING AND MAINT.	21	21	0	1	1	0.00	2
85128584	MACHINERY MAINTENANCE WORKER	38	38	0	1	1	0.00	2
22135057	MECHANICAL ENGINEERS	71	68	-1	2	1	-1.41	2
24505224	CHEM. TECHN. AND TECHNOL., E	37	35	0	1	1	-0.05	2
21921027	CLAIMS EXAMINERS, PROP. AND	11	11	0	1	1	0.00	2
91105695	LATHE MACH. TOOL SET. & SET-	50	50	0	1	1	0.00	2
85314597	MOBILE HEAVY EQUIPMENT MECHA	56	54	0	1	1	-0.04	2
98316897	HELPERS, ROOFERS	16	14	0	1	1	-0.12	2
92512732	OFFSET LITHOGRAPHIC PRESS SE	21	21	0	1	1	0.00	2
92721749	SEWING MACHINE OPERATORS, NO	18	18	0	1	1	0.00	2
91705708	WELDING MACHINE OPERATORS AN	34	32	0	1	1	-0.06	2
98315896	HELPERS, PLUMBERS, PIPEFITTE	23	21	0	1	1	-0.09	2
91117697	MACH. TOOL CUT. OP. AND TEND	68	66	0	1	1	-0.03	2
21199049	ALL OTHER FINANCIAL SPECIALI	38	38	0	1	1	0.00	2
92921779	ROASTING MACH. OPER. AND TEN	25	24	0	1	1	-0.04	2
97999887	ALL OTHER MATERIAL MOVING EQ	42	41	0	1	1	-0.02	2
63041445	FISH AND GAME WARDENS	7	7	0	1	1	0.00	2
92705753	TEXTILE MACH. OPER. AND TEND	27	26	0	1	1	-0.04	2
92914777	PAPER GOODS MACH. SETTERS AN	20	20	0	1	1	0.00	2
21908029	CONSTRUCTION AND BUILDING IN	18	18	0	1	1	0.00	2
24502223	BIO. AND AG. TECHN. AND TECH	47	47	0	1	1	0.00	2
85928610	MECH. CONT. AND VALVE INSTAL	23	23	0	1	1	0.00	2
89808630	FOOD BATCHMAKERS	35	34	0	1	1	-0.03	2
85921613	MUSICAL INSTRUMENT REPAIRERS	5	5	0	1	1	0.00	2
89508656	UPHOLSTERERS	10	10	0	1	1	0.00	2
85923609	LOCKSMITHS AND SAFE REPAIRER	4	4	0	1	1	0.00	2
95023321	AUXILIARY EQUIPMENT OPERATOR	22	22	0	1	1	0.00	2
34014186	BROADCAST NEWS ANALYSTS	17	17	0	1	1	0.00	2
37899537	ALL OTHER CONSTRUCTION TRADE	20	19	0	1	1	-0.05	2
85944608	GAS APPLIANCE REPAIRERS	24	24	0	1	1	0.00	2
85721622	POWERHOUSE, SUBSTATION, AND	32	32	0	1	1	0.00	2
98313894	HELPERS, ELECTRIC. AND POWER	30	29	0	1	1	-0.03	2
85908604	ELECTROMEDICAL AND BIOMEDICA	7	7	0	1	1	0.00	2
97944865	CRANE AND TOWER OPERATORS	18	18	0	1	1	0.00	2
79005478	NURSERY WORKERS	25	25	0	1	1	0.00	2
89805626	BAKERS, MANUFACTURING	20	18	0	1	1	-0.10	2
22126055	ELECTRICAL AND ELECTRONICS E	54	54	0	1	1	0.00	2
97808860	PARKING LOT ATTENDANTS	5	5	0	1	1	0.00	2
91702709	WELDING MACHINE SETTERS AND	38	37	0	1	1	-0.03	2
85328599	SMALL ENGINE SPECIALISTS	23	23	0	1	1	0.00	2
92926762	BOILER OPERATORS AND TENDERS	17	16	0	1	1	-0.06	2
92962780	SEPARATING AND STILL MACH. O	22	22	0	1	1	0.00	2
85947602	COIN AND VENDING MACH. SERVI	20	19	0	1	1	-0.05	2

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89702648	COMPOSITORS, TYPESETTERS, AN	17	17	0	1	1	0.00	2
89999681	ALL OTHER PRECISION WORKERS	30	30	0	1	1	-3.20	2
87811522	GLAZIERS	26	25	0	1	1	-0.04	2
85917618	WATCHMAKERS	4	4	0	1	1	0.00	2
85118581	MACHINERY MAINTENANCE MECHAN	28	28	0	1	1	0.00	2
85302561	CENTRAL OFFICE AND PBX INSTA	14	14	0	1	1	0.00	2
22311073	SURVEYING AND MAPPING SCIENT	6	7	0	0	0	0.17	2
89711647	BOOKBINDERS	2	3	0	0	0	0.50	2
85717573	ELECTRONICS REPAIRERS, COMME	11	12	0	0	0	0.09	2
97199886	ALL OTHER MOTOR VEHICLE OPER	9	10	0	0	0	0.11	2
85714571	ELECTRIC MOTOR, TRANSFORMER.	17	18	0	0	0	0.06	2
32305162	OCCUPATIONAL THERAPISTS	17	18	0	0	0	0.06	2
25312065	STATISTICIANS	3	4	0	0	0	0.33	2
22302070	ARCHITECTS, EXC. LANDSCAPE A	13	14	0	0	0	0.08	2
39002228	AIR TRAFFIC CONTROLLERS	13	14	0	0	0	0.08	2
85514563	RADIO MECHANICS	11	12	0	0	0	0.09	2
22105058	METALLURGISTS AND MET., CER.	3	3	0	0	0	0.00	2
83008672	TRANSPORTATION INSPECTORS	4	4	0	0	0	0.00	2
27599248	ALL OTHER RELIGIOUS WORKERS	1	1	0	0	0	0.00	2
28308238	TITLE SEARCHERS	2	2	0	0	0	0.00	2
24199092	ALL OTHER PHYSICAL SCIENTIST	12	12	0	0	0	0.00	2
27505101	DIRECTORS, RELIGIOUS ACTIVIT	1	1	0	0	0	0.00	2
25310083	MATHMETICAL SCIENTISTS	3	3	0	0	0	0.00	2
53114352	CREDIT AUTHORIZERS	6	6	0	0	0	0.00	2
49002272	SALES ENGINEERS	13	13	0	0	0	0.00	2
80000200	SUPERVISORS, ANIMAL CARE & L	4	4	0	0	0	0.00	2
53111372	LOAN INTERVIEWERS	11	11	0	0	0	0.00	2
43005258	BROKERS, REAL ESTATE	7	8	0	0	0	0.14	2
79999495	ALL OTH. AGRIC., FOREST., FI	216	217	0	0	0	0.00	2
68023408	BAGGAGE PORTERS AND BELLHOPS	6	7	0	0	0	0.17	2
31209133	ALL OTHER PHYSICAL SCIENCE T	11	12	0	0	0	0.09	2
21105044	CREDIT ANALYSTS	11	12	0	0	0	0.09	2
24599222	ALL OTHER SCIENCE TECHNICIAN	29	30	0	0	0	0.03	2
22132063	SAFETY ENGINEERS, EXCEPT MIN	7	8	0	0	0	0.14	2
53305281	INSURANCE APPRAISERS, AUTO D	1	1	0	0	0	0.00	2
53914361	REAL ESTATE CLERKS	9	10	0	0	0	0.11	2
25302252	OPERATIONS AND SYSTEMS RESEA	11	12	0	0	0	0.09	2
32926195	ELECTROCARDIOGRAPH TECHNICIA	10	11	0	0	0	0.10	2
68032463	WARDROBE AND LOCKER AND DRES	1	1	0	0	0	0.00	2
39014244	EMBALMERS	5	5	0	0	0	0.00	2
31511147	CURATORS, ARCHIV., MUSEUM TE	2	3	0	0	0	0.50	2
28102109	JUDGES AND MAGISTRATES	2	2	0	0	0	0.00	2
85799623	ALL OTH. ELEC. AND ELEC. EQ.	17	17	0	0	0	0.00	2
39003241	RADIO OPERATORS	6	6	0	0	0	0.00	2
79021496	FARM EQUIPMENT OPERATORS	1	2	0	0	0	1.00	2

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68017416	GUIDES	2	2	0	0	0	0.00	2
22308071	LANDSCAPE ARCHITECTS	3	3	0	0	0	0.00	2
85914620	CAMERA AND PHOTOGRAPHIC EQUI	1	1	0	0	0	0.00	2
68008413	MANICURISTS	3	3	0	0	0	0.00	2
43008259	SALES AGENTS, REAL ESTATE	6	7	0	0	0	0.17	2
25108231	COMPUTER PROGRAMMER AIDES	30	31	0	0	0	0.03	2
89599657	ALL OTHER PREC. TEXT., APP.,	0	1	0	0	0	**********	2
85126542	REFRACTORY MAT. REPAIRERS, E	1	1	0	0	0	0.00	2
57111292	TELEGRAPH AND TELETYPE OPERA	2	2	0	0	0	0.00	2
85938612	MOBILE HOME REPAIRERS	5	5	0	0	0	0.00	2
22508214	INDUSTRIAL ENGINEERING TECHN	8	8	0	0	0	0.00	2
97899889	ALL OTHER TRANSPORTATION AND	25	26	0	0	0	0.04	2
57105290	DIRECTORY ASSISTANCE OPERATO	1	1	0	0	0	0.00	2
67011459	ELEVATOR OPERATORS	1	2	0	0	0	1.00	2
31111122	LECTURERS	2	2	0	0	0	0.00	2
34026180	CAMERA OPERATORS, TELEVISION	8	8	0	0	0	0.00	2
53505371	INVESTIGATORS, CLERICAL	1	1	0	0	0	0.00	2
53117353	CREDIT CHECKERS	14	14	0	0	0	0.00	2
53908334	ADVERTISING CLERKS	12	12	0	0	0	0.00	2
63002435	FIRE INSPECTORS	4	4	0	0	0	0.00	2
53108299	TRANSIT CLERKS	17	18	0	0	0	0.06	2
87114519	LATHERS	1	1	0	0	0	0.00	2
63023444	BAILIFFS	2	2	0	0	0	0.00	2
24111089	GEOLOGISTS, GEOPHYSICISTS, A	1	1	0	0	0	0.00	2
87602513	CARPET INSTALLERS	10	10	0	0	0	0.00	2
87308523	HARD TILE SETTERS	4	4	0	0	0	0.00	2
87605538	FLOOR LAYERS, EXC. CARPET, W	1	1	0	0	0	0.00	2
24108090	METEOROLOGISTS	1	1	0	0	0	0.00	2
85308594	MOTORCYCLE REPAIRERS	11	11	0	0	0	0.00	2
61002433	FIRE FIGHTING AND PREVENTION	15	16	0	0	0	0.07	2
24308079	BIOLOGICAL SCIENTISTS	20	20	0	0	0	0.00	2
27199098	ALL OTHER SOCIAL SCIENTISTS	8	8	0	0	0	0.00	2
53708285	LICENSE CLERKS	12	12	0	0	0	0.00	2
31204124	CHEMISTRY TEACHERS	11	11	0	0	0	0.00	2
87111518	TAPERS	7	7	0	0	0	0.00	2
87305509	STONE MASONS	1	1	0	0	0	0.00	2
24311081	MEDICAL SCIENTISTS	4	4	0	0	0	0.00	2
34005189	TECHNICAL WRITERS	5	5	0	0	0	0.00	2
22123065	AGRICULTURAL ENGINEERS	12	12	0	0	0	0.00	2
25111240	PROGRAMMERS, NUMERICAL, TOOL	3	3	0	0	0	0.00	2
22114053	CHEMICAL ENGINEERS	10	10	0	0	0	0.00	2
89921675	DENTAL LAB TECHNICIANS, PREC	18	19	0	0	0	0.06	2
10120000	VETERINARY ASSISTANTS	9	10	0	0	0	0.11	2
87817521	FENCE ERECTORS	3	3	0	0	0	0.00	2
34044175	MERCHANDISE DISPLAYERS AND M	14	15	0	0	0	0.07	2

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27105097	URBAN AND REGIONAL PLANNERS	14	15	0	0	0	0.07	2
90040499	SPRAYERS & APPLICATORS	10	11	0	0	0	0.10	2
55317368	CORRESPONDENCE CLERKS	19	19	0	0	0	0.00	2
22199064	ALL OTHER ENGINEERS	16	18	0	0	0	0.00	2
31508146	AUDIO-VISUAL SPECIALISTS	4	4	0	0	0	0.00	2
89114640	PATTERN AND MODEL MAKERS, ME	1	1	0	0	0	0.00	2
87511533	SEPTIC TANK SERVICERS AND SE	8	9	0	0	0	0.12	2
85511564	SIGNAL OR TRACK SWITCH MAINT	6	6	0	0	0	0.00	2
24399082	ALL OTHER LIFE SCIENTISTS	22	23	0	0	0	0.05	2
34058172	ATHLETES, COACHES, UMPIRES,	15	16	0	0	0	0.07	2
85505562	FRAME WIRERS, CENTRAL OFFICE	1	1	0	0	0	0.00	2
89302664	PATTERN AND MODEL MAKERS, WO	12	12	0	0	0	0.00	2
73008494	LOG HANDLING EQUIPMENT OPERA	1	1	0	0	0	0.00	2
85705568	DATA PROCESSING EQUIPMENT RE	11	11	0	0	0	0.00	2
89314663	FURNITURE FINISHERS	3	3	0	0	0	0.00	2
25315045	FINANCIAL ANALYSTS, STATISTI	3	3	0	0	0	0.00	2
85326589	AIRCRAFT ENGINE SPECIALISTS	1	1	0	0	0	0.00	2
32914204	NUCLEAR MEDICINE TECHNOLOGIS	5	6	0	0	0	0.20	2
27102094	ECONOMISTS	11	12	0	0	0	0.09	2
31212128	HEALTH SPECIALTIES TEACHERS	11	11	0	0	0	0.00	2
62026449	U.S. MARSHALLS	1	1	0	0	0	0.00	2
85323590	AIRCRAFT MECHANICS	18	18	0	0	0	0.00	2
58011329	TRANSPORTATION AGENTS	9	9	0	0	0	0.00	2
34032250	FILM EDITORS	1	1	0	0	0	0.00	2
89708649	LITHOGRAPHY AND PHOTOENGRAVI	6	6	0	0	0	0.00	2
80002843	SUPERVISORS, NURSERY WORKERS	4	4	0	0	0	0.00	2
22517219	ESTIMATORS AND DRAFTERS, UTI	8	8	0	0	0	0.00	2
66021403	OCCUPATIONAL THERAPY ASSISTA	6	6	0	0	0	0.00	2
90000499	HUNTERS & TRAPPERS	0	1	0	0	0	**********	2
85951601	BICYCLE REPAIRERS	6	6	0	0	0	0.00	2
85113579	MACHINERY MAINTENANCE MECHAN	9	9	0	0	0	0.00	2
89902677	FOUNDRY MOLD AND CORE MAKERS	7	7	0	0	0	0.00	2
85726574	STATION INSTALLERS AND REPAI	12	12	0	0	0	0.00	2
92545736	PHOTOENG. & LITHOGR. MACH. O	1	1	0	0	0	0.00	2
89911676	DETAIL DESIGN DECORATORS AND	3	3	0	0	0	0.00	2
92546728	BINDERY MACHINE OPERATORS	14	14	0	0	0	0.00	2
89917684	OPTICAL GOODS WORKERS, PRECI	5	5	0	0	0	0.00	2
92549742	ALL OTH. PRINT., BIND., AND	4	4	0	0	0	0.00	2
89923683	MEDICAL APPLIANCE MAKERS	4	4	0	0	0	0.00	2
92702754	TEXTILE MACHINE SETTERS AND	4	4	0	0	0	0.00	2
53802313	TRAVEL CLERKS	7	8	0	0	0	0.14	2
39005246	TRAFFIC TECHNICIANS	1	1	0	0	0	0.00	2
90000474	HORT SPECIALITY FARMERS	2	2	0	0	0	0.00	2
32311168	CORRECTIVE AND MANUAL ARTS T	6	7	0	0	0	0.17	2
98323899	HELPERS, EXTRACTIVE WORKERS	2	2	0	0	0	0.00	2

LISTING OF OCCUPATIONS IN MERGED AREA COMMUNITY COLLEGE 12
Total Openings (growth + replacement)
1988 - 1992
Source: Iowa Occupational Information Network

OES Code	Occupational Title	Employment Level 1988	Employment Level 1992	Average Change 1988-92 (+ or -)	Average Replacement Needs 1988-92	Average Annual Openings 1988-92	Ave. Annual Percent Change 1988-1992	Area-type
92714751	TEXT. BLEACHING AND DYEING M	1	1	0	0	0	0.00	2
90000484	NURSERY WORKERS	5	5	0	0	0	0.00	2
90040400	IRRIGATION INSTALLERS	2	2	0	0	0	0.00	2
97802876	BRIDGE, LOCK, AND LIGHTHOUSE	4	4	0	0	0	0.00	2
53128335	BROKERAGE CLERKS	12	12	0	0	0	0.00	2
93953818	GRINDING AND POLISHING WORKE	18	18	0	0	0	0.00	2
56005298	DUPLICATING MACHINE OPERATOR	17	19	0	0	0	0.12	2
95005829	GAS PLANT OPERATORS	2	2	0	0	0	0.00	2
97905873	TANK CAR AND TRUCK LOADERS	3	3	0	0	0	0.00	2
91102702	SAWING MACH. TOOL SET. & SET	10	10	0	0	0	0.00	2
93947808	PAINTING, COATING, AND DECOR	9	9	0	0	0	0.00	2
93944807	MOLDERS AND CASTERS, HAND	16	16	0	0	0	0.00	2
91308703	SHEAR MACH. SET. AND SET-UP	14	14	0	0	0	0.00	2
91111698	MILLING MACH. SET. AND SET-U	10	10	0	0	0	0.00	2
91314701	ROLLING MACH. SET. AND SET-U	3	3	0	0	0	0.00	2
61005438	POLICE AND DETECTIVE SUPERVI	34	35	0	0	0	0.03	2
57199293	ALL OTHER COMMUNICATIONS EQU	7	7	0	0	0	0.00	2
97702834	AIRCRAFT PILOTS AND FLIGHT E	13	13	0	0	0	0.00	2
91508688	COMB. MACH. TOOL OP. AND TEN	18	18	0	0	0	0.00	2
56021356	DATA KEYERS, COMPOSING	11	11	0	0	0	0.00	2
93917819	SOLDERERS AND BRAZERS	14	14	0	0	0	0.00	2
91708707	SOLDER. AND BRAZ. MACH. SETT	1	1	0	0	0	0.00	2
92905773	MOTION PICTURE PROJECTIONIST	9	9	0	0	0	0.00	2
93926801	CUTTERS AND TRIMMERS, HAND	11	11	0	0	0	0.00	2
91902723	PLAS. MOLDING MACH. SETTERS	9	9	0	0	0	0.00	2
91911718	METAL MOLDING MACH. OPERATOR	3	3	0	0	0	0.00	2
93928809	PORTABLE MACHINE CUTTERS	10	10	0	0	0	0.00	2
93921810	PRESSERS, HAND	4	4	0	0	0	0.00	2
91921711	ELEC. PLAT. MACH. OPER. & TE	1	1	0	0	0	0.00	2
21502032	CLAIMS TAKERS, UNEMPLOYMENT	1	1	0	0	0	0.00	2
91926720	NONEL. PLAT. MACH. OPER. & T	4	4	0	0	0	0.00	2
92911781	TIRE BUILDING MACHINE OPERAT	10	10	0	0	0	0.00	2
91932717	HEAT TREATING MACH. OPER. &	5	5	0	0	0	0.00	2
22102052	AERONAUTICAL AND ASTRONAUTIC	1	1	0	0	0	0.00	2
91938715	HEATERS, METAL AND PLASTIC	2	2	0	0	0	0.00	2
97517856	ORDINARY SEAMEN AND MARINE O	1	1	0	0	0	0.00	2
92198726	ALL OTH. MET. & PLAS. MACH.	20	20	0	0	0	0.00	2
87105514	CEIL. TILE INSTALLERS AND AC	3	3	0	0	0	0.00	2
92305756	HEAD SAWYERS	4	4	0	0	0	0.00	2
92923772	FURNACE, KILN, OR KETTLE OPE	6	6	0	0	0	0.00	2
92311760	WOODWORKING MACH. SETTERS AN	7	7	0	0	0	0.00	2
53911360	PROOFREADERS AND COPY MARKER	6	6	0	0	0	0.00	2
92956763	CEMENT. AND GLUING MACH. OPE	10	10	0	0	0	0.00	2
92308757	SAWING MACHINE OPERATORS AND	5	5	0	0	0	0.00	2
97399868	ALL OTHER RAIL VEH. OPERATIV	16	16	0	0	0	0.00	2

LISTING OF OCCUPATIONS IN MERGED AREA COMMUNITY COLLEGE 12
Total Openings (growth + replacement)
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Source: Iowa Occupational Information Network

OES Code	Occupational Title	Employment Level 1988	Employment Level 1992	Average Change 1988-92 (+ or -)	Average Replacement Needs 1988-92	Average Annual Openings 1988-92	Ave. Annual Percent Change 1988-1992	Area-type
97311846	LOCOMOTIVE FIRERS	2	2	0	0	0	0.00	2
97953885	PUMP OPERATORS	4	4	0	0	0	0.00	2
92519734	ALL OTH. PRINT. PRESS SETTER	7	7	0	0	0	0.00	2
92522741	SPEC. MAT. PRINTING MACH. SE	6	6	0	0	0	0.00	2
93111793	ELECTROMECHANICAL EQUIP. ASS	3	3	0	0	0	0.00	2
92525729	BINDERY MACHINE SETTERS AND	4	4	0	0	0	0.00	2
97941866	HOIST AND WINCH OPERATORS	5	5	0	0	0	0.00	2
93908800	COIL WINDERS, TAPERS, AND FI	1	1	0	0	0	0.00	2
97914883	MAIN LINE STATION ENGINEERS	1	1	0	0	0	0.00	2
97921880	GAS COMPRESSOR OPERATORS	1	1	0	0	0	0.00	2
97928878	DREDGE OPERATORS AND DIPPER	1	1	0	0	0	0.00	2
95028825	POWER DISTRIBUTORS AND DISPA	17	17	0	0	0	0.00	2
91905722	PLASTIC MOLDING MACH. OPERAT	34	34	0	0	0	0.00	2
91311692	EXT. & DRAW. MACH. SET. AND	3	3	0	0	0	0.00	2
91923721	NONEL. PLAT. MACH. SET. & SE	3	3	0	0	0	0.00	2
93932816	CARPET CUTTERS, DIAGRAMMERS,	2	2	0	0	0	0.00	2
91935714	FURNACE OPERATORS AND TENDER	1	1	0	0	0	0.00	2
91917712	ELEC. PLAT. MACH. SET. & SET	1	1	0	0	0	0.00	2
92302758	SAWING MACHINE SETTERS AND S	1	1	0	0	0	0.00	2
91928716	HEAT. EQUIP. SET. & SET-UP O	1	1	0	0	0	0.00	2
93114792	ELECTRICAL AND ELECTRONIC EQ	9	9	0	0	0	0.00	2
92197725	ALL OTH. MET./PLAS. MACH. SE	17	17	0	0	0	0.00	2
97302848	RAILROAD CONDUCTORS AND YARD	13	13	0	0	0	0.00	2
92515731	LETTERPRESS SETTERS AND SET-	4	4	0	0	0	0.00	2
93108794	FITTERS, STRUCTURAL METAL, P	4	4	0	0	0	0.00	2
92524738	SCREEN PRINT. MACH. SETTERS	7	7	0	0	0	0.00	2
97308849	RAIL YARD ENGINEERS, DINKEY	1	1	0	0	0	0.00	2
15021020	MIN., QUARRY., AND OIL AND G	1	1	0	0	0	0.00	2
97926877	DRAGLINE OPERATORS	2	2	0	0	0	0.00	2
93905802	ELECTRICAL AND ELECTRONIC AS	1	1	0	0	0	0.00	2
92997785	ALL OTHER MACHINE SETTERS AN	18	18	0	0	0	0.00	2
89905678	MOLDERS/SHAPERS, EXC. JEWEL	4	4	0	0	0	0.00	2
97305845	LOCOMOTIVE ENGINEERS	9	9	0	0	0	0.00	2
92753775	PAINTING MACHINE OPERATORS A	21	21	0	0	0	0.00	2
92314759	WOODWORKING MACHINE OPERATOR	16	15	0	0	0	-0.06	2
92521737	PHOTOENGRAVING AND LITHOGRAP	8	8	0	0	0	0.00	2
93105795	MACH. BUILDERS AND OTH. PREC	23	22	0	0	0	-0.04	2
93197797	ALL OTHER PRECISION ASSEMBLE	4	4	0	0	0	0.00	2
89908679	PATTERNMAKERS, MODEL MAKERS,	1	1	0	0	0	0.00	2
92510735	PRINTING PRESS MACH. SETTER	11	11	0	0	0	0.00	2
93911803	GLAZIERS, MANUFACTURING	5	5	0	0	0	0.00	2
97317847	RAILROAD BRAKE, SIGNAL, AND	22	22	0	0	0	0.00	2
92968787	EXTRUDING AND FORMING MACH.	17	16	0	0	0	-0.06	2
98314895	HELPERS, PAINTERS, PAPERHANG	11	10	0	0	0	-0.09	2
89999631	ALL OTHER PRECISION FOOD AND	6	5	0	0	0	-0.17	2

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85956611	MENDERS, GARMENTS, LINENS, A	8	10	0	0	0	0.25	2
93902804	MACHINE ASSEMBLERS	23	22	0	0	0	-0.04	2
87902554	EARTH DRILLERS, EXC. OIL AND	1	1	0	0	0	0.00	2
87702506	AIR HAMMER OPERATORS	14	13	0	0	0	-0.07	2
92941786	CUTTING AND SLICING MACH. SE	10	9	0	0	0	-0.10	2
31202129	LIFE SCIENCE TEACHERS	43	45	0	0	0	0.05	2
91908719	MET. MOLDING MACH. SETTERS A	3	2	0	0	0	-0.33	2
85317598	RAIL CAR REPAIRERS	6	6	0	0	0	0.00	2
55326325	PROCUREMENT CLERKS	15	14	0	0	0	-0.07	2
34056182	PRODUCERS, DIRECTORS, ACTORS	7	7	0	0	0	0.00	2
24105088	CHEMISTS	21	20	0	0	0	-0.05	2
87317529	PLASTERERS	5	4	0	0	0	-0.20	2
91305699	PRESS MACH. SET. AND SET-UP	19	18	0	0	0	-0.05	2
91302700	PUNCH. MACH. SET. AND SET-UP	17	16	0	0	0	-0.06	2
89117638	LAYOUT WORKERS, METAL, PRECI	7	7	0	0	0	0.00	2
91114694	GRINDING MACH. SET. AND SET-	19	18	0	0	0	-0.05	2
91108691	DRILL. MACH. TOOL SET. AND S	26	25	0	0	0	-0.04	2
85932621	ELEVATOR INSTALLERS AND REPA	6	5	0	0	0	-0.17	2
21505035	SPECIAL AGENTS, INSURANCE	15	17	0	0	0	0.13	2
89123637	JEWELERS AND SILVERSMITHS	12	12	0	0	0	0.00	2
85728569	ELECTRICAL INSTALLERS AND RE	13	12	0	0	0	-0.08	2
98319898	HELPERS, ALL OTHER CONSTRUCT	11	10	0	0	0	-0.09	2
25313084	ACTUARIES	4	4	0	0	0	0.00	2
34035171	ARTISTS AND COMMERCIAL ARTIS	19	20	0	0	0	0.05	2
89399666	ALL OTHER PRECISION WOODWORK	3	2	0	0	0	-0.33	2
87314535	REINFORCING METAL WORKERS	4	3	0	0	0	-0.25	2
72002469	FIRST LINE SUPERVISORS, AGRI	16	15	0	0	0	-0.06	2
67008376	PEST CONTROLLERS AND ASSISTA	14	16	0	0	0	0.14	2
89199644	ALL OTHER PRECISION METAL WO	1	1	0	0	0	0.00	2
89135633	BOILERMAKERS	7	7	0	0	0	0.00	2
32923196	ELECTROENCEPHALOGRAPH TECHNI	5	6	0	0	0	0.20	2
92928784	COOLING AND FREEZ. EQUIP. OP	14	12	0	0	0	-0.14	2
85702575	TEL. AND CABLE TV LINE INSTA	46	44	0	0	0	-0.04	2
92917766	COOKING MACH. OPER. AND TEND	23	21	0	0	0	-0.09	2
22511215	MECHANICAL ENGINEERING TECHN	16	18	0	0	0	0.12	2
91505689	COMB. MACH. TOOL SET. AND SE	19	17	0	0	0	-0.11	2
87108517	DRYWALL INSTALLERS	23	21	0	0	0	-0.09	2
87805543	SHEET METAL DUCT INSTALLERS	16	14	0	0	0	-0.12	2
92958783	CLEANING AND PICKLING EQUIP.	39	36	-1	1	0	-2.56	2
83002669	INSPECTORS, TESTERS, AND GRA	37	35	0	0	0	-0.05	2
85123586	MILLWRIGHTS	32	29	-1	1	0	-3.12	2
92971771	EXTRUDING AND FORMING MACH.	41	38	-1	1	0	-2.44	2
92944768	CUTTING AND SLICING MACH. OP	59	56	-1	1	0	-1.69	2
89914680	PHOTOGRAPHIC PROCESS WORKERS	4	6	0	0	0	0.50	2
92951783	PAINTING MACH. SETTERS AND S	13	11	0	0	0	-0.15	2

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97951863	CONVEYOR OPERATORS AND TENDE	41	38	-1	1	0	-2.44	2
22514218	DRAFTERS	88	86	0	0	0	-0.02	2
97923879	EXCAVATING AND LOADING MACHI	35	32	-1	1	0	-2.86	2
34047177	MUSIC DIR., SINGERS, COMPOSE	1	1	0	0	0	0.00	2
63028440	CRIMINAL INVESTIGATORS, FEDE	3	3	0	0	0	0.00	2
89132641	SHEET METAL WORKERS	54	50	-1	1	0	-1.85	2
31226125	COMPUTER SCIENCE TEACHERS	8	8	0	0	0	0.00	2
63011441	POLICE DETECTIVES	13	15	0	0	0	0.15	2
21902030	COST ESTIMATORS	77	73	-1	1	0	-1.30	2
98311892	HELPERS, BRICK AND STONE MAS	43	39	-1	1	0	-2.33	2
22521074	SURVEYING AND MAPPING TECHNI	24	26	0	0	0	0.08	2
87302508	BRICK MASONS	42	37	-1	1	0	-2.38	2
87311515	CONCRETE AND TERRAZZO FINISH	59	54	-1	1	0	-1.69	2
89705651	JOB PRINTERS	7	7	0	0	0	0.00	2
92932769	DAIRY PROCESS. EQUIP. OPERAT	71	66	-1	1	0	-1.41	2
92947776	PAINTERS, TRANSPORTATION EQU	9	9	0	0	0	0.00	2
98312893	HELPERS, CARPENTERS AND RELA	96	85	-3	3	0	-3.12	2
97956870	OPERATING ENGINEERS	97	90	-2	2	0	-2.06	2
32511158	PHYSICIAN ASSISTANTS	23	25	0	0	0	0.09	2
32314166	SPEECH PATHOLOGISTS AND AUDI	31	33	0	0	0	0.06	2
81005499	FIRST LINE SUPERVISORS, CONS	147	134	-3	3	0	-2.04	2
53308283	INSURANCE EXAMINING CLERKS	14	16	0	0	0	0.14	2
32317164	RECREATIONAL THERAPISTS	29	31	0	0	0	0.07	2
87708540	PAVING, SURFACING, AND TAMPI	52	48	-1	0	-1	-1.92	2
91714705	METAL FABRICATORS, STRUCTURA	23	20	-1	0	-1	-4.35	2
87808532	ROOFERS	62	54	-2	1	-1	-3.23	2
87802525	INSULATION WORKERS	26	23	-1	0	-1	-3.85	2
93938805	MEAT, POULTRY, AND FISH CUTT	620	583	-9	8	-1	-1.45	2
87814536	STRUCTURAL METAL WORKERS	47	41	-2	1	-1	-4.26	2
*** Total ***		75221	76187	220	2883	3053	**********	

EXHIBIT 1

LIST OF INTERVIEWEES

WESERN IOWA TECH COMMUNITY COLLEGE

Brenda Porter
Cal Brinkerhoff
Nick Zarcos
Dr. Gratia Gilbert
Dr. Robert Rice
Mr. Bill Walker
Mr. Gary Swaney

DES MOINES

Iowa Department of Education

Dr. JoAnn Horton, Administrator
Division of Community Colleges

Maryellen Knowles, Asst. Chief
Bureau of Instruction and Curriculum

other brief discussions with IDE personnel

OTHER

Mike Waters, Labor Coordinator
Central Iowa Construction

Allan Moore
Iowa State Occupational Informational Coordinator

SIOUX CITY

Don "Skip" Meisner, Executive Director
SIMPCO
Sioux City, Iowa 51102

David O. Biorn, President
St. Luke's Regional Medical Center
2720 Stone Park Blvd.
Sioux City, IA 51104

Barry Backhaus
President and C.E.O.
First Federal Savings and Loan Assn.
329 Pierce Street
P.O. Box 897
Sioux City, IA 51102

Michael V. Groff, Director of Staffing
Iowa Beef Processors, Inc.
Dakota City, NE 68731

LaNora P. Krenc
Siouxland Labor-Management Committee
P.O. Box 3595
Sioux City, IA 51102

Glenn Ivarsen
401 Douglas Street
Sioux City, IA 51101

Roland Junck
Prince Manufacturing Corporation
4600 S. Lewis Blvd.
Sioux City, IA 51106

Ed Vanderberg
Gateway 2000
610 Gateway Rd.
N. Sioux City, S.D.

David Anderson
Chamber of Commerce
Economic Development
101 Pierce Street
Sioux City, IA 51102

EXHIBIT 2

MAJOR EMPLOYERS

OCTOBER 1989

Over 1000 Employees

City of Sioux City
IBP, inc.
Marian Health Center
Pioneer, TeleTechnologies – 1900 tie communications
St. Lukes Regional Medical Center
Sioux City Community School District
185th Tactical Fighter Group, Iowa Air National Guard

501 - 1000 Employees

Aalfs Manufacturing Company
John Morrell & Company
Midwest Energy; IPS Electric, Midwest Gas
Terra International

251 - 500 Employees

Dakota Pork Industries
Hy-Vee Food Stores
Interbake Foods, Inc.
Metz Baking Company
AC Rochester
Security National Bank
Shopko Department Stores
Sioux Tools, Inc.
Sunshine Food Markets
U.S. West Communications
Wal-Mart
Western Iowa Tech Community College
Wilson Trailer Company
Woodbury County

101 - 250 Employees

American Pop Corn Company
Blue Cross of Western Iowa and South Dakota
Briar Cliff College
Burlington Northern Railroad
Cargill, Inc.
Chesterman Company
Direct Transit

First National Bank
Gateway 2000
Hilton Inn
Irving F. Jensen Company, Inc.
JC Penney Company, Inc.
Joe Morten Insurance Company
K Mart Discount Store
Kind & Knox Gelatin
L & R Communications
Marina Inn
Morningside College
Norwest Bank
Pak Fabricators, Ltd.
Penncorp Financial Company, Inc.
Prince Manufacturing Company
Schaeff/NAMCO
Sears Roebuck and Company
Sioux City Foundry Company
The Sioux City Journal
Sioux Honey Association
Sodrac Park (seasonal)
Stone Container Corp.
Target Stores
W.A. Klinter, Inc.
Wall Street Mission/Goodwill Industries
Weller Plastics

51 - 100 Employees

AG Processing, Inc.
American Equipment Corp.
Bear Graphics
Boulevard Food Store
Broyhill Company
Brower Construction Company
Cargo, Inc.
Central United Life Insurance Company
Chicago Northwester Transportation Company
Cloverleaf Cold Storage
Comnet 2000
Con Agra
Container Corporation of America
Dura-Pak Corporation
Fareway Stores
First Federal Savings & Loan Association
The Gerkin Company
Grandview Health Resources
Hart Beverage Company
Chris Hansen Construction Company, Inc.
Heartland Foods

EXHIBIT 2 (continued)

Hirschbach Motor Lines, Inc.
Hoak Motors, Inc.
Holiday Inn of Sioux City
Holtze Construction Company
Iowa Pork Industry, Inc.
KCAU-TV Channel 9
KTIV-TV Channel 4
Knoepfler Chevrolet Company
L & L Builders Company
McCracken Concrete Pipe Machinery Company
New York Life Insurance Company
Nutra-Flo Chemical Company
Purina Mills, Inc.
Rocklin Manufacturing Company/Remedy, Inc.
Sioux Gateway Airport
Sioux Laundry
Sioux City Brick & Tile Company
Sioux City Stationery Company
Siouxland Quality Meats
State Steel Supply
TBJ Contractors Corp.
Team Ford Company
Tri-Land Foods
Van Buskirk Construction Company (seasonal)
Walgreens Drug Stores
Williams Appliance and Television Stores
Younkers
Charlie Zook Motors

COMMUNITY ECONOMIC DEVELOPMENT PROJECTS

Siouxland Initiative

The aggressive activity of local businesses to import new and enhance existing employers has targeted small industrial and manufacturing firms (very limited growth projected), electrical assembly operations, insurance services, credit card/financial services, health care, and food processing operations. This project is known as the "Siouxland Initiative."

The Siouxland Initiative proposes a plan with clear objectives, dates, and a coordinated effort on behalf of the community to make growth in the area a reality. It strikes the project team as a reasonable plan with its goals based on a diversification of employment opportunities in the area as well as increased capital investments. Its elements include:

- Expansion and Retention of Existing Business
- New Business Attraction
- Small Business Development
- Community Image Enhancement

It would seem appropriate for WITCC to explore cooperative opportunities with the Siouxland Initiative particularly with regard to a program that visibly enhances small business development and by actively supporting efforts to help improve the image of the community. This would give the added community presence to WITCC and would be a good initial step in the development of "cooperative co-option."

Dakota Dunes Project

The 216-acre business park, a project of Midwest Energy Company, is being marketed as a total planned community and seeks to attract high tech manufacturers and research facilities, bringing with it a core of technical and professional salaried individuals. To the extent this project succeeds, the entire area will benefit not only through increased payroll of professional level salaries, but also through construction of plants, homes, recreational facilities and service businesses. While WITCC would be little involved in this project in terms of training these workers, there are a variety of ways in which it may benefit from the "spin off" employment and other opportunities associated with the implementation of the project. Certainly, it would add a potential of faculty for new courses, as well as a constituency of support for college initiatives.

Other Business Recruitment Development Efforts

Under active recruitment by interested parties in the area are several insurance firms and a credit card company. This would suggest a need for effectively trained business/office individuals. In this regard, broadly based general education, math, and arts and sciences backgrounds would be indicated as would support for enhanced technical, computer, data entry, and clerical skills. Communication, both written and verbal, would be needed at levels higher than seems generally available in the existing labor market. Also needed are data processing, marketing, telecommunications, office management, and fiber optics manufacturing skills, as well as more actuarial assistants, and computer operators, should these efforts be successful. Also there seems to be a growing base of telemarketing firms in the area. Network Communications, Inc., a new company in the area, intends to expand its workforce to 300 in the near future. Gateway 2000, a computer assembly firm, markets itself strictly through telemarketing routes. These activities suggest at least some improvement in the labor market, pending the fruition of current planning.

GENERAL EMPLOYMENT/INDUSTRIAL TRENDS

Underemployment characterizes the region. Further, it appears that many of the more highly skilled workers required for many of the projected new jobs will have to be recruited from outside the immediate region. Iowa exports most of its baccalaureate-level graduates to other states, creating a rather serious "brain drain" in most areas, Sioux City included. Moreover, the decade-old economic stagnation has caused the emigration of some of its previously employed college-trained workforce. There does not appear to be a substantial number of professionally trained individuals unemployed in the region, no available "pool" equal to the skills of the jobs that will be created if current plans are realized. However, in addition to employing high skilled technical workers, the community initiatives, if successful, could employ a large number of the currently underemployed, less skilled workers in construction and the service industries. Thus, some improvement in the employment picture remains a possibility.

Community economic developers hope that these efforts will ultimately create an important regional business hub, since Omaha, Lincoln, Des Moines, Sioux Falls, Kansas City, and Minneapolis are within a 300 mile radius. The size and experience of the Midwest Energy Company backing the Dakota Dunes project, for example, indicate that there may be at least some substance to this hope.

Medical Sector Employment

The medical industry in the area is dominated by two large full-service medical facilities which have little or no competition in the geographic area. These two medical centers (St. Luke's and Marion) are specialized according to comparative advantage. Initially, this will involve in-house training programs in nursing. The duopoly will soon specialize in particular medical treatment and other services. There is no planned expansion of St. Luke's facility. Local sources indicate that the hospitals do not intend to significantly increase the supply of medical services personnel. Therefore, the expected increase in demand by area residents for medical services will be provided by a more efficient use of about the same number of medical staff. Job descriptions have been rewritten to accommodate increased responsibilities and workloads.

There also exists a growing trend to locate the provision of medical services, out of the medical facility and into the home, doctor's office, and on to social welfare program providers and other personnel not paid by the medical centers. This will create a new level of medical service providers. At present, no trained labor pool exists to satisfy the prospective increased demand for off-site medical services. Growth in medical sector employment, then, will tend to be in these areas.

As a result of the airline tragedy in 1989, Sioux City's medical industry has emerged as a leader in medical emergency and trauma training. This has led and may continue to lead to new educational programs offered by the local medical centers as well as a spill over to WITCC for increased emergency medical technician training, or other health-related occupations. WITCC should investigate more extensive cooperation with the local

centers in order to better utilize new training opportunities in the area. It is clear from the demographic picture that Sioux City is the center of provision of medical services in the region, at least in terms of the six counties which WITCC officially serves. It is also likely that the educational/medical community will be receiving increased pressure to provide leadership in gerontological services as the population ages.

Agricultural Sector Employment

Given the agrarian base and the existing food processing firms, any new agricultural based firms are expected to emphasize the packaging process in areas such as beef by-products, packaging in consumer packages, frozen foods, canned products, dog food, etc. The workforce requirements, in addition to clerical, office, and computer technology skills, would in this case, include meat cutters, assembly workers, transportation workers of all kinds, marketers, sales persons, etc.

Implicitly, however, any foreseen increases in agricultural sector employment in the future will in no way match the losses that have occurred or will yet occur. The net change will be a continued clear deemphasis of agriculture and its attendant industries insofar as employment is concerned.

Service Sector Employment

While growth is expected within the service industry, they tend to be at the higher end of the service industry scale and indicate a need for better than elementary skills in communication and arts and sciences. The response by business people interviewed by the project team seems to reflect a need for employees to understand the impacts of their behavior, the importance of quality communication, and team-play productivity. Employers were concerned about an employee recognition of the "bottom line" of the company (i.e., the need for solid economic education) and the necessity for employers to have a skilled, thinking, and motivated work force. It is a cliche, but the fact cannot be ignored that the workplace and its products now compete in a global market. In order to compete, the work force must be prepared for this environment. WITCC can provide a substantial service to the business community by offering useful arts and sciences programs to these workers.

In its favor, Iowa is known to place a high value on education, with approximately 88 percent of students graduating from high school. But as the absolute number of high school students decline, the median age of community college students will inevitably increase. According to the Iowa Job Service, employers are more likely to reduce the labor costs of their workplace by using more part-time workers and keeping the number of full term, core employees to a minimum. This work environment puts increasing pressure on employees to maintain and increase their work skills. According to business interviews, WITCC will need to develop more programs to fit the needs of those individuals already working, and seeking to maintain existing employment as well as be aggressive in career development and planning services. The workplace of the '90's and beyond will place

increasing demands on employees to participate and aggressively take responsibility for their work careers.

Others indicated that the most valued employee will be those who possess the communication as well as the critical thinking skills necessary to change as work responsibilities change. Education will be seen as a continuing part of the career growth process, establishing a life-long relationship between the educational community and the individual. Many employers offer training programs that compete with WITCC's efforts. WITCC should investigate cooperative co-option with these employers. In some cases, WITCC may be able to provide better training at a lower cost.

Cooperative co-option would also distract WITCC from training people for jobs that no longer exist, a criticism made by one major employer of WITCC graduates. Because there is an extensive system of advisory groups for programs at WITCC, cooperative co-option and cooperative program building and redesign could put WITCC at the cutting edge of training and instruction. However, the function of these advisory groups require careful review and should include specialists from outside the geographic area.

Whether real or simply perceived, employers see little follow up by WITCC as to the quality and effectiveness of their training programs. This may or may not be a "valid" criticism in the relationship between WITCC and employers, but the perception seemed to be pervasive in parts of the business community. There was a real interest shown in having WITCC identify a specific contact individual for these concerns.

Given this view of employment issues, the following discussion will emphasize the role of education in this process.

STATEWIDE POLICY ISSUES

EDUCATION AND ARTICULATION CONCERNS

Iowa Department of Education

In general discussions with several leaders in the Iowa Department of Education (IDE) there seems to be a growing concern regarding the programs offered by community and technical institutions across the state. First, concern was expressed that community colleges need to open a dialogue internally to better coordinate their program efforts. These efforts should then lead to a plan to improve the educational effectiveness of college programs, as well as economic efficiency by eliminating program duplication. Also, state leaders are concerned about a more uniform articulation of programs between community colleges and high schools.

The pressure for this latter effort is directed from the legislature as well as from the community at large. Legislation has been implemented in an effort to put "teeth" into the process (Senate Bill 449). There are to be new state accreditation guidelines by July 1, 1992, and a required compliance date of July 1, 1993. The package apparently stresses a two track system: career options and direct transfers to senior-level institutions. There will be evaluation criteria, outcome oriented student achievement measures, and a need to document the process of student achievement.

The following are recent state-level documents that reflect the department's concern and are likely to influence the directions of community college programs in the future.

Iowa Board of Regents Strategic Plan For Off-campus Credit Programming

This June 1990 report states as one of its essential missions the offering of programs on a statewide basis. It may be this charge through the auspices of the Regents that enables WITCC to: (1) secure appropriate resources (staff) for arts and science courses and (2) develop long term commitments and full-time staffing situations to stabilize high quality arts and sciences instruction. There is concern that some portions of the state do not receive the caliber of instruction equal to others around the state. This may cause resources to be redirected to the western portion of the state.

Iowa College Student Aid Commission

A recent study by the Iowa College Student Aid Commission produced results regarding the employment patterns of higher education graduates. The 4-year institutions export outside of Iowa about 60 percent of their graduates. The good news for community/vocational programs is that about 86 percent remain in state. This should not be treated as a surprising statistic but instead be used as a selling point for acquiring increased state tax revenues. The Commission has developed a computerized system for tracking these graduates and may offer helpful suggestions for the improvement of such

data collection for WITCC graduates and students. This linkage may greatly reduce the expense of establishing a program.

Senate Bill 449

Senate Bill 449 sets forth a very specific set of outcomes for vocational programs, particularly at the secondary level, as well as ordering an extensive program review process. Of particular note is the annual review of 20 percent of the programs in operation for accountability to state guidelines, the designated requirement of a set of core competencies and curriculum, a regional planning board, and the charge that the regional planning board will be responsible for explaining any discrepancies from the outcomes associated with programs in their region.

This seems to provide an incentive to the Iowa Department of Education and the Division of Vocational Education to begin and implement the process of standardizing and eliminating duplication of programs. At the heart of this, and from conversations with division personnel, there is a concerted effort to unify the voice and practices within the state department and a determination to standardize the offerings of vocational programs in each region of the state at both the secondary and postsecondary level. Of particular interest will be the implementation of the regional planning boards charged with coordinating the vocational offerings and core curriculum of the community colleges and from within the school districts.

Strengthening Community College Linkages, Iowa Department of Education, January 1990

This document provides a set of directions to be undertaken by the Division of Community Colleges. Every community college is expected to provide a high caliber general education core to enable students to transfer experiences easily into senior institutions. It also outlines areas of accountability, program standardization, and staff/ educational guidelines. It is expected that future funding and approval of programs will depend on quality assurance and accountability of programs. The state and the IDE are very interested in reducing the duplication of educational services and at the same time improving educational guidelines and quality.

A Challenge to Change

This document is the final report of the Legislative Higher Education Task Force produced at the end of 1989. Again, the call is for: (1) access to higher education; (2) responsiveness on the part of institutions; (3) quality and accountability; and (4) coordination of programs, noting the need to develop articulation guidelines. The report writers recognize how difficult this process is really going to be and state the intent to continue the process over the next 10-20 years or as necessary.

Articulation

There will be an emphasis of state regulation in the following areas:

(1) Vocational and high school programs. An effort to standardize requirements, eliminate duplicate programs, and tailor the offerings of secondary and postsecondary institutions suggests more shuttling of students between schools.

(2) Remediation programs. Pressure abounds for every educational institution to address this problem. What will also be needed is better-designed intake assessment procedures/processes for students identified as needing remediation.

(3) Advanced placement programs. These will probably receive much notice, but not be widely used by students, except for those exceptional students who should be especially encouraged to move ahead in educational pursuits.

(4) Agreements with 4-year institutions. The articulation agreement process between institutions is largely controlled by the 4-year, senior institutions. Any agreements and cooperation of instruction will enhance and improve this process, but it must be stated that the 4-year institutions appear to the study team to wield disproportionate influence in statewide educational issues. This would tend to discourage hope.

Clearly, the programmatic emphases of state government will have an impact on WITCC. As such, they can provide an important support for movement at WITCC in areas discussed in this document. In so doing, these policy-level considerations will be taken into account as specific topics emerge and recommendations provided.

CONCLUSIONS

It is easy to advocate change from the outside because one tends to minimize the costs relative to the benefits. Yet forces within and without WITCC seem to be gathering to demand an elevation of the programs and services at the college to a higher plateau. WITCC, as an institution and as a group of professionals, has decided it wants to be part of the solution to the area's underemployment and economic problems in the region. To the extent that the community grows and prospers and payrolls and population increase, WITCC is likely to benefit.

Cooperative co-option is a means for WITCC to keep its position without yielding programs it would rather retain, while using available expertise already in place throughout the community. For example, it was clear in our interviews that the medical community plans to consolidate its training of nursing students which may limit the demand for such programs with WITCC. By cooperative co-option, it may be possible for the parties involved to specialize, e.g., arts and sciences and general nursing courses would be taught at WITCC and specialized nursing services would be taught by one of the hospitals. This arrangement could provide a higher quality education at a reduced cost to all parties. It also might be a model for instructional interface between WITCC and the larger community.

Seizing this opportunity would require WITCC to adapt to changing conditions in specific ways. It could, and perhaps should, devote more energy and personnel to serve on Chamber committees, possibly offer tours of the college to outsiders and appropriately design literature for prospective new businesses, provide ongoing seminars and course programs to support small businesses, and conduct institutionalized follow-up of student placements in area businesses including detailed follow-up surveys to employers and former students. Clearly, some of these activities are being provided today. However, much could be gained by a more sophisticated, systematic approach to these opportunities. Every effort should be made to support employers of WITCC graduates, to be responsive to their needs and concerns, as is taking place elsewhere around the country. Further, the development of long-term commitments between the institution and its graduates/students for continuing career and employment support seems obvious to the project team.

In the area of occupational programs, WITCC can no longer see itself as a totally independent entity. The State of Iowa is demanding greater accountability of state funds as well as certification of programs. To the extent that there remains the traditional conflict between the "academic" and the "vocational" portions of the schools' program, debating which program is more important to the student or school is counterproductive.

What is clear from the employer-focused interviews is the serious problem of the lack of employee skills in basic education coupled with the unrealistic expectations of job-seekers concerning earning prospects. In addition, a fundamental and structural change in the local labor market is taking place. The output of every worker in Siouxland competes with other products by other workers in a global marketplace. It is the cold economic reality that if the value of their output and products is not higher than the wages

paid for that factor of production, individuals will eventually lose jobs. Further, if a company cannot compete, it will not remain in business. Recent evidence shows that people are not going to work at the same job for a lifetime. In fact, they are likely not only to change jobs every 3-5 years, but they will find themselves doing substantially different tasks than they previously performed. These "career" changes are likely to occur a number of times in a work life. Lengthy preparation for a highly specialized, unique, nontransferable skill will be wasted money for the state and taxpayers, and be a prohibitive opportunity cost to the student.

Present dissatisfaction on behalf of employers is focused on the lack of basic skills, the inability of individuals to solve problems or generalize upon their educational knowledge. Those that can read need to read better. Those that can solve basic math problems need to be able to develop a more sophisticated numeracy. Those that can input data to computers need to be able to identify more effective and efficient ways to manage it. Minimal literacy is no longer a sufficient condition to remain employed at a living wage in a global economy. Most educational institutions are going to be called on to not only remediate individuals but institute programs to raise the general ability levels in employees on a recurring basis. In terms of responsibility, a community college's task will be the entire community in this area. As yet, there are few programs available to approach this responsibility, but it is likely that the new guidelines being formulated by the IDE will begin to push this frontier.

It would be a mistake to conclude that a complete restructuring at WITCC is needed. Some programs have rigid certification requirements and some programs continue to offer appropriately prepared employees to the marketplace. The timely appearance of the Title III grant is a giant step in the right direction. Applause is offered to the efforts necessary to obtain a Title III grant and the development of community leadership from within WITCC. The task is enormous but bodes well for the future. The philosophical orientation of the college seems to be right on target for addressing many problems. Indeed, the future environment in which educational agencies will operate, both in Iowa and around the world, will be significantly different than in the past. Institutions that seize the opportunity, building support within and without, will survive. And that seems to be the bottom line, whether to survive the transformation and thrive or slip into a footnote in the larger community and educational arena. WITCC is positioned to go in either direction, depending on its choices and its actions.

Generally, the business community seemed to feel that WITCC is a substantial asset and marketing tool for the community at large, but needs to improve its public image. It was also underscored that the general level of education available in the work force represents a crisis for employers. Yet, there was cautious optimism for the future of the Siouxland economy. Finally, most individuals were very impressed that WITCC is engaged in a process of self-study and attempts to increase its profile in the community. This in itself will serve to improve the image of the college in the community.

Given this framework, the project moved forward into specific issue areas defined in the project goals. Progress in each area will be reviewed, followed by a set of recommendations for action by the college community.

OCCUPATIONAL AND CAREER EDUCATION

A SUMMARY OF PLANNING EFFORTS WITH OCCUPATIONAL AND CAREER EDUCATION DIVISION STAFF

The foundation of Western Iowa Tech Community College is career and occupational education. It is thought of around the State of Iowa as a "tech" institution, a point validated by not only the college's history, but also the very large percentage of the budget and student body represented by this division. There is reason indeed for the reputation of the school, one embraced proudly.

However, institutional change transforms everything. Because of its predominant position, the college cannot move forward without the division ready to embrace change. Its response in this regard has been dramatic, effective, and highly positive. It is therefore appropriate that this project report begin with efforts on the vocational-technical side of the curricular ledger.

Project Activity

Project staff from The Ohio State University visited WITCC in July, October and December, 1990 and again in March and May, 1991. The purpose of these visits was to work with college administrators, faculty, and staff administrators and staff to consider and explore improvement to the current mix of programs and courses so as to enable the college to better serve the Siouxland region. A summary of these activities and outcomes of these visits with regard to Occupational and Career Education, will follow in subsequent sections.

Drs. Grossman and Starr first made a three-day visit to the college in July, 1990. During this visit project staff met with Dr. Kiser and his cabinet and with administrators of the Occupational and Career Education division. The following tasks were accomplished: (1) the purposes of the project were reviewed in detail; (2) the current state of affairs regarding progress toward implementing a comprehensive plan for Western Iowa Tech and the role of occupational and career education in that plan were discussed; (3) project staff were made aware of the scope of activities to be performed as required by the recently funded Title III proposal; (4) the implications for the college and for the current project were discussed; (5) opinions and attitudes of administrators about conditions that will facilitate or constrain changes in arts and sciences and occupational and career education curricula were reviewed; and (6) a tentative schedule for project activities was established.

Project staff came away from three days of meetings with a number of observations and impressions. First, the Title III proposal will be a key stimulus to institutional change. To ensure a successful implementation of the Title III proposal, the college will in all likelihood need to ensure that adequate priority, staff, and resources are brought to bear to ensure implementation and completion of the proposal. The newly created position of executive vice president can play a key role here.

Second, it was noted that the management information system (MIS) has the potential of enabling the president and key staff to monitor, manage, and control college costs and programming better and most importantly, to establish uniform standards of accountability. In all likelihood, a comprehensive MIS could benefit operations, accountability, and assessment of occupational and career education programs as well.

Third, much needs to be done to determine what areas of concentration should be offered within the arts and science curriculum of the college. Some, of course, will undoubtedly in part be determined by programming within the division of vocational and career education. For reasons of cost control, institutional stability, and convenience, the ability to "leverage" course offerings should be maximized. College administrators also will need to improve articulation of arts and sciences occupational and career education offerings.

Fourth, administrators and staff of the occupational and career education division either have initiated competency-based curriculum efforts or have begun to familiarize themselves with current approaches. A tentative schedule was agreed upon for visits by Dr. Norton to initiate the DACUM/SCID process. (Note: it was subsequently decided by mutual agreement between the college and the project director to cancel this effort and reallocate resources for this purpose to other project tasks.)

Dr. Edwards and Ms. Kehler, consultants employed by the project, traveled to WITCC from Des Moines to report on progress in collecting data for use in developing a paper describing the economy, demography, and employment picture in Siouxland. While in Des Moines, they met with staff from the state board for community colleges as well as staff of state economic development and employment services agencies.

Dr. Starr made a visit to WITCC in October. At the request of Dr. Kiser, he visited with Mr. William Driencewic, a manager at the local Job Services office to gain his impressions about economic and employment conditions likely to impact on program planning by administrators and staff of the occupational and career education division of the college. Mr. Driencewic gave his impressions of changes that have taken place in the local labor market during the past decade. In addition he provided unemployment data for 1989 and 1990. He indicated that the Sioux City area bottomed out of the recession about 1982 or 1983, unemployment has dropped to about 4.2-4.3 percent during 1989 and the first half of 1990, manufacturing remains stable although reduced from former years, and there is some growth in the service sector of the local economy although wages continue to be very low.

Another unfavorable feature of service jobs in the local economy is the tendency by employers to make many service jobs part-time in nature. Lastly, if Dakota Dunes is successful it was Mr. Driencewic's impression that its overall impact on the local economy would be difficult to estimate.

A workshop for the administrators within the Occupational and Career Education division was convened by Dr. Dunker and conducted by Dr. Starr. The workshop explored the following areas: (1) a process for increasing awareness of staff about the complexities

and requirements for institutional and division planning; (2) major structural and functional conditions within the WITCC organization that act as facilitators or barriers to formulating and implementing a new vision for WITCC and the division; and (3) potential strategies for identifying instructional and service needs to Siouxland.

At the start of the workshop excerpts from a draft document prepared by Dr. Edwards and Ms. Kehler were distributed to the group. The document described the economy of the Sioux City labor market area and it was used as a basis for examining factors that could affect program initiation and termination decisions as well as institutional and vocational-technical missions.

Next, the concept of "values" as influencing institutional and division missions was introduced. The group was guided into a discussion on ways in which differences in values based on demographic data and educational philosophy are likely to specifically affect WITCC and division missions. There was agreement that the institution and division missions of WITCC should be periodically reassessed.

The topic of mission was introduced and the need to deal with division programming in the context of WITCC as a business--albeit an educational one. The group examined the consequences on current and future programming based on current and future customer bases, profit and loss concerns, institutional funding sources, and multiple and competing value systems. The purposes for this exercise were to: (a) throw current programming on the table and create a more future-oriented vision for division programming and (b) implant the idea that the concept of mission is goal or target based and that the target might be a moving one.

The group agreed that institutional mission serves as a guide and prerequisite for a division mission and that the development or revision of both institution and division missions should involve the widest participation by persons who will be affected by the missions. Finally, the topic of shared leadership was introduced. Dr. Dunker described his view of shared leadership and how he perceived its operation within WITCC. Workshop participants were given the opportunity to discuss the potential and pitfalls of a shared leadership approach at WITCC.

It was decided to continue the workshop for an additional half day. Dr. Starr opened the workshop session by representing himself as an auditor from the firm of "Nit and Pickers." Nitpickers was given the assignment of rating the institution as an investment. WITCC was defined as a business with a set of products, investor and customer groups, and a balance sheet. The group was told that Nitpickers was concerned about institutional profitability and its strategies for increasing profitability--especially as it attempts to serve diverse clients in a milieu of declining revenues and changing economic, social, and educational conditions. The group was asked to suggest a set of institutional and programming strategies that would convince Nitpickers that WITCC and its "tech" division should receive an A+ + + rating. (See appendices for instruments used in this workshop.)

The group expressed a number of suggestions for improving image, marketing and new advertising strategies were suggested to deal with problems of declining enrollments.

A variety of other strategies for program improvement surfaced. These included, restructuring the "tech" and arts and sciences curricula so that it will be course rather than program based, assuming limited and estimated life-spans for courses based on market factors, reducing the levels in the organizational structure to enhance communication and decision-making, modifying attendance policies, increasing the use of adjunct faculty and training sites, and establishing a more "hospitable" environment for new students and potential enrollees.

Drs. Grossman and Starr visited WITCC in December. During that visit occupational and career education supervisors were oriented to the purposes of the project and were led by Dr. Starr into a discussion designed to obtain their reactions and inputs to the problem of curriculum changes for the division. Also present (but not participating in the discussions) were the division administrators who unfortunately may have experienced some information overload since much of the discussion was a repeating of the process that took place during the October meeting.

Based on the nature of the discussion and interactions among supervisors, project staff, and Dr. Dunker, it may be inferred that many of the supervisors are understandably concerned over the possibility of curricula changes in the delivery of vocational-technical education. On the other hand, it appeared to project staff that there was a willingness for curricula changes to occur. The goals which were established for this meeting appeared to have been met.

Following the meeting with the supervisors, Dr. Dunker, division administrators, and Drs. Grossman and Starr met to discuss three options facing WITCC as it endeavors to enhance its vocational-technical education programming: These options were: (1) maintain the present programming being offered to students; (2) review current offerings and determine which ones should be terminated, which ones continued as they are, and which ones should be combined or integrated with others to produce a more responsive program mix; and (3) plan mainly to offer 2-year associate degree technology programs that are carefully articulated with arts and sciences courses and offer other kinds of vocational education programs only when local conditions and needs warrant and resources are available. This option would likely produce the greatest resistance from staff because it would result in "major surgery" in contrast to the other two options.

Staff elected to spend the afternoon discussing the implications of option 2 on current vocational-technical education programming. All current programs were listed with two criteria being applied to each one. The criteria were percentages of enrollment increase or decrease and median wages of program completers. The data used were produced by a student follow-up procedure conducted by Student Services. A summary of the deliberations was prepared by project staff. Table IV displays these results, showing the instructional program, approximate enrollment changes from 1985-1990, and the average hourly wage paid for workers in the occupational area. Finally, staff made a determination as to whether the program should be continued, dropped, or modified. Subsequent reflection and review led to a new analysis and schedule. Table V presents this, the term "modified" indicating a determined need for structural program change, perhaps including a merger of programs into one supporting a portion of an associates degree program.

During March, project staff met with Dr. Dunker and the division administrators and continued efforts to decide about which current offerings should be combined, which ones terminated, and what new occupational offerings should be considered for implementation. Since the last meeting, division administrators held meetings at which they produced among other things a mission statement for the division as well as qualitative criteria for associate degrees in occupational areas.

During the Spring of 1991 staff prepared a mission statement for the division, conceptualized learning continuum, including "stopping-off" points, and formulated qualitative criteria for granting the associate degree in occupational areas. These are found in exhibits 3, 4, and 5. Later in the spring, staff began to implement these plans in terms of the criteria defined during the course of the year.

TABLE IV

Five-Year Analyses (not "Projection"): 1985-1990

Occupational Program	Enrollment Changes (+ or -)	Average Siouxland Wage	Continue	Drop	Modify
ACCOUNTING	-20%	6.06	X		
ACCT SPEC	-60%	5.84	X		
ADMIN ASST	-50%	5.31			X
AG-POWER	-80%	5.08			X
AG. TECH	0	5.86			X
AIR CONDIT	-15%	8.52			X
ARCH CONS DRAFT	+15%	9.23		X	
ARCH ENG TECH	+15%	7.06	X		
ASSOC DEG NURS	+75%	10.36	X		
AUTO BODY	-33%	6.50			X
AUTO MECHANICS	-40%	5.67	X		
AUTO MANF TECH	+20%	0.00	X		
AUTO TECH	0	9.13	X		
BAND REPAIR	-25%	9.65	X		
BAND TECH	+133%	9.65	X		
BIO-MED ELEC	-50%	8.08	X		
BUILD MAIN.	0	6.12			X
CARPENTRY	0	5.50			X
CLER BKKP	-60%	4.75			X
COMP PUB TECH	NEW	0.00	X		
COMP PROG	-33%	8.94			X
DATA PROC	-40%	6.22		X	
DENTAL ASSIST	+20%	6.66	X		
DIESEL MECH	-75%	6.99			X
ELECTRICIAN	+30%	8.06	X		
ELEC COMM	+30%	8.06	X		
ELEC ENG TECH	-50%	8.18	X		
ELEC SYS MAIN	-30%	7.68		X	
ENERGY/SOLAR	-45%	8.00			X
EQUIP RENTAL	-90%	7.70		X	
GRAPHICS	-45%	5.33			X
HEAT/SHEET/PLUM	0	7.37	X		
INFO/WD PROCESS	0	5.99	X		
LEGAL SEC	0	4.99	X		
LIVESTOCK PROD	-50%	7.21	X		
MKT. MANAGE	+45%	6.98			X
MEAT CUTT/SAUS	-15%	8.00	X		
MECH DRAFTING	+35%	6.49		X	
MECH ENG TECH	0	7.93	X		
MED SECRETARY	0	5.76	X		
MICRO SPECIAL.	-10%	5.00			X
PARK/GOLF COUR.	-40%	5.90	X		
PIANO TEC/REP.	-22%	13.21	X		
POLICE SCIENCE	0	6.60	X		
PRAC NURSING	+110%	8.57		X	
SECRETARY	0	5.02			X
SURG. TECH	0	6.89			X
TELECOMM	-30%	9.87	X		
WELDING	-40%	6.58	X		

TABLE V

Review of Program Determination

IN

Accounting
Accounting Specialist
Architectural Construction Engineering Tech
Associate Degree Nursing
Auto Body
Auto Mechanic
Automated Manufacturing
Band Repair
Band Tech
Biomed Electronics
Carpentry
Computer Publishing Tech
Dental Assistant
Electrician
Elec. Communications
Electronic Engineering Technology
Heating-Sheet Metal
Information/Word Processing
Livestock Production
Meat Cutting
Mechanical Engineering Tech

Park & Golf
Police Science
Piano Tech/Repair
Practical Nursing
Telecommunications
Welding

Modify

Administrative Assistant
Ag Power
Ag Tech
Air Conditioning
Biomed Electronics
Building Maintenance
Computer Programming

Energy/Solar
Graphics
Marketing Management
Micro Specialist
Medical Secretary
Equipment/Rental Management
Secretary
Surgical Technology

EXHIBIT 3

Mission Statement

The mission of the Occupational and Career Education Division of WITCC is to empower individuals to reach their occupational, academic, and personal goals. This is accomplished by providing all students a continuum of educational opportunities culminating in an Associate degree.

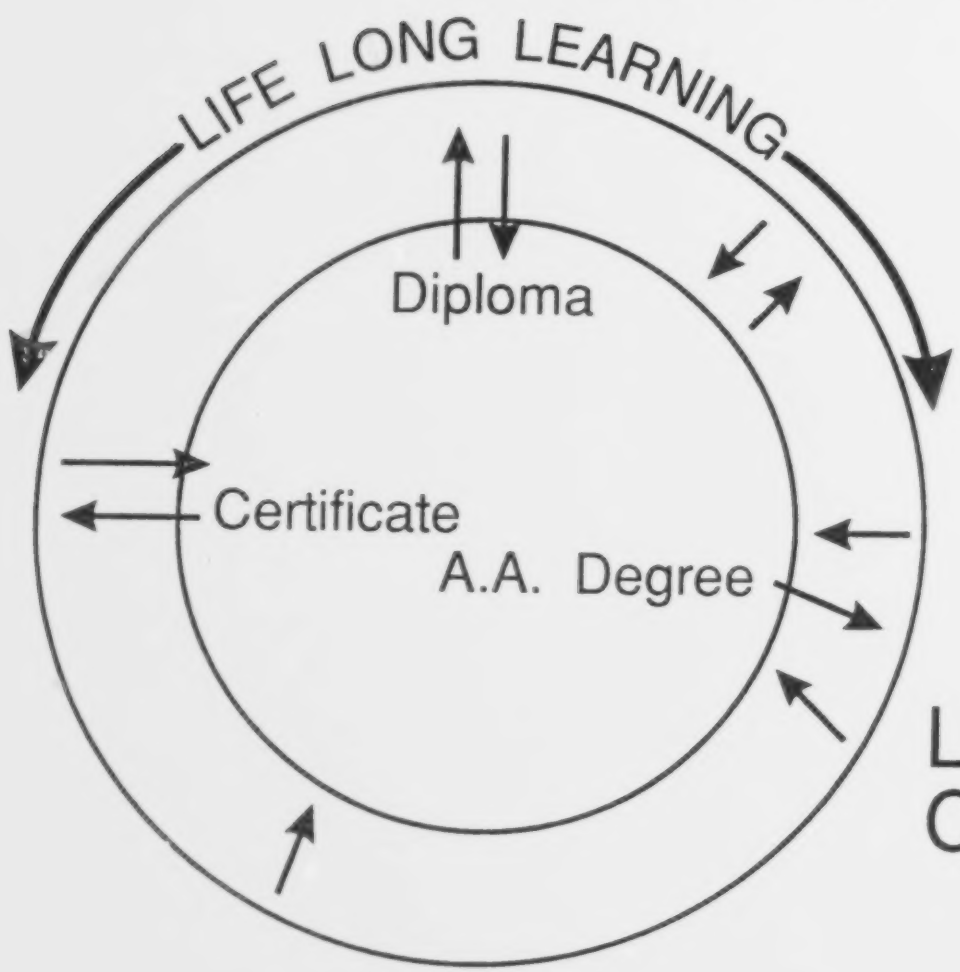
EXHIBIT 4

Continuum of Educational Opportunities

1. Career and academic assessment
2. Developmental education, as needed
3. General education/related studies common to all students
4. Technical specialty courses
5. Technical support courses
6. Completion of Associate's Degree
7. Life-long learning opportunities

STOPPING OFF POINTS
DIPLOMA
CERTIFICATE

EXHIBIT 4 (continued)



LEARNING CONTINUUM

EXHIBIT 5

Qualitative Criteria for Associate Degree in Occupational Areas

1. Technical sophistication required in occupational areas

2. Depth and breadth of curricular content intrinsic in the field

3. Occupation will require students to use cognitive skills at the analysis and synthesis levels, as opposed to recall level

4. Course content will teach student how to learn further

Analysis

The progress made by the Occupational and Career Education Division was quite remarkable. One point, purely symbolic in and of itself, but clear evidence of transformation, was the change in terminology the division utilized in referring to itself. Considered the "vocational-technical" group early in the project, the process of redefinition of mission, goals, and strategies led to a redefinition of the group itself. The division very certainly took a quantum leap through self-examination and the positive outcomes are in very clear evidence.

Relative to the new mission statement of the division, it is important to note that it now unites occupational, academic, and personal goals with the overall purpose of empowerment in all these arenas. This is a far cry from narrow, job-specific training as has so appropriately defined its performance in the past. Occupational and Career Education has now set itself the task of preparing the people of Siouxland to live productively in the 21st century.

Worthy of note as well is the notion that education is a continuum of opportunities, recognizing that those programs which serve a student's need today may require updating tomorrow. Indeed, a program that leads to a "dead end" within the college likely also provides little opportunity to grow in the student in the workplace. Hence, the divisional curriculum must be able to expand and grow as well and that it must be linked to relevant arts and sciences courses. Further, that as the college's overall product is providing students an opportunity to acquire the associate's degree, Occupational and Career Education must be developmental and capable of delivering the technical relevance worthy such of an advanced degree.

From this perspective, two clear directions emerge. First, as identified by the staff itself, job-specific certificate and diploma programs are currently ends in themselves. However, in the "new WITCC," they become only temporary "stopping points," means to new ends. Second, any distinction between Occupational and Career Education and other aspects of the college's programs is arbitrary and bureaucratic. Vocational-technical offerings must be leveraged and linked with every other area. The expressed concern that emerged from the Occupational and Career Education Division was, appropriately, for the "whole college." This in itself was progress.

The format of a report cannot do justice to the distance travelled by the staff and administration of the Occupational and Career Education Division during the course of this project. Initially embracing a rather defensive posture about its past, the division took a hard look at itself and its results, identified the barriers and constraints, and eventually, courageously embraced its future. The details therein remain to be determined, of course. The project staff has provided recommendations that it believes will assist the group in pursuing its goals. However, genuine progress toward accomplishing these objectives has been transformed from a mere hope to a reasonably assured outcome. The entire division is to be heartily congratulated.

COMMUNITY AND CONTINUING EDUCATION

A SUMMARY OF PLANNING EFFORTS WITH THE COMMUNITY AND CONTINUING EDUCATION STAFF

In its original formulation, the Community and Continuing Education Division (then called "Continuing Education") was exempted from the scope of this project. At the time, and particularly given the focus of the project as it was considered then, Continuing Education was perceived to have an independence of mission and orientation that was outside of the curricular mainstream of the college. A planning study of the college, therefore, was inconsistent with the needs of the division, which had its own agenda.

This began to change as the purposes of the project shifted. With more emphasis on staff development as opposed to formalized planning, it became clear that continuing education could not be ignored. Further, given the size of its presence in the college in terms of both staff and student contribution, WITCC administrators determined that attention must be given to continuing education, particularly in light of the progress of the Occupational and Career Education Division. If WITCC was indeed moving to an associate's degree-based format, continuing education was too important a source of community impact to not include. Further, if a means could be found to enhance the path of continuing education students into the college mainstream, all aspects of the organization would be strengthened. With this in mind, the project team began a series of meetings with the Community and Continuing Education team.

Project Activity

The project team first met with the "Continuing Education" staff in March of 1991. The first several hours of discussion involved an exhaustive review of all programs recently delivered by the division, such as a computer graphics expo in February; a cooperative venture with unions in support of an apprenticeship program leading to certification; the 3rd Annual Regional Fire School; "Emergency '91," an event to inservice emergency workers; recertification programs of emergency medical technicians; provision of continuing education for nurses; customized training in statistical process control; and insurance and real estate seminars, both for credit and licensing, as well as other short-term training programs being planned.

Additional time was spent exploring the divisional role in adult basic education; its emphasis in "English as a Second Language" (ESL); its focus on occupation-specific language training; and, of course, General Equivalency Diploma (GED) classes. In this latter regard, division staff pointed out that it was very involved as of late with the upcoming GED graduation in June.

Project staff then inquired as to those aspects that best characterized work in the division. The response was that a very high quality job was being performed, that the division provided more hours of training at a lower price than anywhere else. Continuing education, they asserted, was more in touch with the community than any other part of the college.

Later discussions with the division staff reinforced this self-confident assessment and explored ways in which its task could be more closely linked with the project work occurring elsewhere. The project staff brought the division personnel up-to-date with these efforts, particularly with respect to vocational-technical education. At the suggestion of the college administration, it was intended that both credit and noncredit aspects of the WITCC instructional effort be more closely joined, rather than continuing the competitive relationship sometimes present. With this in mind, the project team introduced the conceptual model it had been using with the vocational-technical and arts and sciences faculty. In sum, project staff emphasized the following aspects of the plan development.

- Orientation - What is the continuing education division trying to accomplish and what is its history?
- Realities - What are the short- and long-term opportunities and/or constraints in the environment?
- Priorities - Which opportunities/constraints are most important and with what values should the division operate?
- Vision - What would the staff like the continuing education division to be in the future? What role should it play in the "new WITCC?"
- Mission - In this vision, what would the mission of the division be?
- Goals - What specific goals are suggested by the mission that would lead to the vision becoming a reality?

After lengthy discussion, the division staff first constructed a set of priorities which emphasized the importance of working with the community and having sufficient skills, staff, and resources to accomplish this appropriately (see exhibit 6). Subsequently, the vision of the division was considered and attention given to what must change in order for this to become a reality. Discussion focused on staff development, better facilities, greater institutional flexibility, and an improved community image (see exhibit 7). Next, the mission of the division was considered (exhibit 8). Finally, specific goals for fulfilling this mission were considered, establishing a target date of the year 2000 (exhibit 9).

During the May visit, project staff reviewed the accomplishments of earlier discussion and pointed out the similarities between the progress of the continuing education (now called "Community and Continuing Education") and the work in other areas. The suggestion was made that the division work with staff in vocational-technical and arts and sciences areas, insofar as it was clear that everyone appeared to be oriented similarly. After some discussion, this suggestion was readily accepted.

EXHIBIT 6

Priorities for Continuing Education (WITCC)

1. Improving "people skills", customer service, product knowledge
2. Institutional/divisional flexibility/creativity with respect to customer needs
3. Customer is boss!
4. Improved ability to assess customer needs
5. "User-friendly" services
6. Quality in all services
7. Improve professional networks, community resource knowledge, expertise, etc.
8. Greater internal support/resources/recognition

EXHIBIT 7

What Must Change for C.E. to Achieve Its Vision?

1. More support staff
2. Better physical facilities/equipment — especially conference facilities
3. Staff development, especially marketing ideas
4. Greater college-wide allegiance/awareness of institutional mission and goals
5. Greater pricing/financial flexibility
6. WITCC image must improve across state lines and be better defined

EXHIBIT 8

Mission

The purpose of the Community Education Division at WITCC is to develop, deliver programs and serve as a knowledge resource responsible to the educational, social, and occupational needs of the people of the area, such that the opportunities for individuals, businesses, and community groups are significantly enhanced.

EXHIBIT 9

Goals

1. By 1995, increase the number of contact hours delivered by Community Education programs by 50%. By 2000, contact hours will increase by 100%.

2. Tuition income from continuing education programs will increase in proportion to contact hours.

3. Measurable goal for social support program

Analysis

The Community and Continuing Education Division has displayed a great deal of growth over the course of this project. Since the beginning of the effort, when division staff displayed a somewhat resistant and defensive posture, the staff began to recognize that change was not tantamount to a threat. Moreover, not only would the "new WITCC" preserve the role of continuing education, but that it would expand. Indeed, insofar as the numbers of traditional students (recent graduates from area high schools) had declined and would continue to decline even more precipitously, more students were going to be "nontraditional," i.e., adult members of the community, most of whom had been out of a school setting for some time. Further, as the service population of the college was now to include all those in the area who had not yet received an associate's degree, course availability would have to be made accessible to a broader group of people. This meant that times and dates of courses, the site at which they were conducted, etc., would have to be "nontraditional" as well. In WITCC, only continuing education utilized the model of educational delivery that would have to be college-wide in the future.

Finally, and perhaps most significantly, continuing education remained in best touch with adult members of the community, the new student core of the college. This meant that the Community and Continuing Education Division not only could communicate with this population, but that a substantial portion of the recruitment of these new students could be initiated through continuing education courses and offerings. All of these factors hardly suggest a lesser role for this crucial element of the "new WITCC."

Clearly, the staff of the division understood the circumstances. Under the guidance of Dr. Dunker and Dr. Rice, the staff quickly embraced the need and opportunity available through collaboration with other instructional units. This made it possible to join Occupational and Career Education; Arts and Sciences; and the newly energized Community and Continuing Education (the change of name significant in itself) into a committee of a whole to address college-wide concerns. This outcome was a major accomplishment of this portion of the project.

ARTS AND SCIENCES

A SUMMARY OF PROJECT ACTIVITY IN THE ARTS AND SCIENCES CURRICULUM

Clearly, a portion of the impetus for an improved arts and sciences curriculum at Western Iowa Tech Community College involves a response to the expectations of the state of Iowa. By statute (Code of Iowa, 280A.1), community colleges are required to be comprehensive. Thus, a community college in Iowa must have offerings from which training in the arts and sciences can be gained, whether its purpose for the student is transfer-related or as an end in itself. This is in no way to discredit the importance of occupational programs; indeed, virtually all of the available information concerning work force requirements of the 21st century point to skill transferability and the ability of workers to communicate effectively. As such, the state is pressing its notion of a "comprehensive" college curriculum as one in which the arts and sciences are well represented.

Yet another reason for WITCC's attention to the arts and sciences is the requirement to attend to it in the context of the recently awarded Title III contract. To be sure, progress must be made in the arts and sciences for the college to reach compliance with the terms of the grant. In this respect, the college has committed itself to the introduction of eight new associate degree programs which are specific to the arts and sciences and oriented to college transfer. Five others provide the opportunity for college transfer while still enabling the student to find employment at the associate's level. Meeting the demands of these requirements makes the implementation of the arts and sciences program mandatory by 1995.

The synthesis of these two bases of action would suggest that WITCC has to move forward with a comprehensive arts and sciences program to keep the doors of the institution open. While this is perhaps true, the project team discerned a much richer, much more compelling and ultimately more effective foundation for the arts and sciences and the college itself: the growing consensus on the part of the faculty and staff that a quality program in the arts and sciences is the right thing to do. Pockets of resistance to this sentiment do indeed exist. Still, there is support, or at least recognition, of the idea that the college can and must make progress quickly in this direction in order to stay current with the needs of its service population and to fulfill its mission as an institution of higher learning.

Project Activity

As originally proposed, arts and sciences issues were to have been a major portion of the focus of this project. Soon after it began, the college's Title III grant was funded which subsumed a substantial part of the planning and implementation functions of the project. This was part of the college administration's rationale for shifting emphases in the project. However, some work in arts and sciences had already begun. As well, the effects of program growth in the area had a decisive impact upon the other instructional areas, particularly in the development of "college-wide concerns." As such, the work done and

issues raised will be discussed, with a much broader consideration occurring later in this document.

In discussions with members of the arts and sciences program, the project team was informed of a 5-year plan for program development, synthesizing its direction with the requirements of Title III. They reported programming or intention to create programs in radio broadcasting, elementary education, computer sciences, and several other areas. While generally optimistic about the direction and priority of the program, leaders in the arts and sciences program expressed concern about the chronic lack of resources in terms of time, space, and personnel, and concern that other units of the college controlled those resources. The problem, according to arts and sciences staff, rested not with the level of awareness of need internal to the program. Rather, there was a considerable degree of skepticism that significant changes of college priorities would be made such that a comprehensive program in the arts and sciences would be immediately forthcoming and available to the Siouxland community.

With regard to specific areas of concentration, the Title III grant provided a listing of associates' degree programs. Of these, most of those qualifying for an Associate of Arts degree had seen some implementing actions; those in the Associate of Science category continued to be under exploration at the time of the project involvement with the area.

Analysis

During the time in which the project had the responsibility of addressing these issues, the same stated limitations emerged that had always plagued attempts to implement the arts and sciences curriculum at WITCC: too few people, too little money, too little time, too little space, and a general feeling that it could not be done. All of which was true! Given the institutional mindset of the college, the standard way of approaching this question was that it could not be done with traditional students from 8:00 a.m. to 3:00 p.m., in the college's own buildings, and with the college's own faculty. The project team was in complete agreement with the staff under such circumstances.

However, the project team asked the arts and sciences staff to consider a paradigm shift. In effect, what if we change the context? What about nontraditional students in schools, workplaces, and storefronts all around Siouxland? Suppose instead of the student meeting the college's schedule, the college met theirs, even if the need required classes to be held from 8:00 p.m. to 3:00 a.m. instead? Why couldn't part-time, non-WITCC faculty teach these courses, perhaps designed around relevant activities, e.g., one's occupation, in such a way that it not only met degree needs, but also had an immediate "payoff" in one's life?

Considering these questions seemed to very much interest the staff, causing them to re-emerge later with answers in the exploration of college-wide issues. Many of these issues received significant attention in that setting.

RESOURCE DEVELOPMENT

RESOURCE DEVELOPMENT

The original project was to have some small measure of involvement for the college's creation of a plan in the resource development area. However, priorities shifted when the college administration suggested turning the project into a staff development effort. This, plus the fact that new resource development staff had been hired to perform this precise function, supported the administration's decision. Accordingly, little project activity took place in this area.

By observation, the project team considers that less progress than the college originally hoped took place over the year. Staff turnovers and other priorities tended to undermine the development of a comprehensive strategic vision in this area. Clearly, WITCC seems to be behind in terms of its hopes for enhanced resource development efforts.

Accordingly, while the project took no direct action in the area, much of what was done elsewhere has a bearing on resource development. New resources into the college can support some of the changes suggested in this document. Therefore, it has been addressed implicitly in most of the recommendations, although it is formally attended to as well. In this latter sense, the college's obvious need for a plan is underscored.

STUDENT SERVICES

A SUMMARY OF PROJECT ACTIVITY IN THE STUDENT SERVICES AREA

The Student Services Division plays a key role at WITCC, in many ways being the communications hub between the population of students and prospective students on one hand and the instructional units on the other. Over time, student services has grown in terms of representation in the organizational structure of the college as well as in its scope of activity.

In the community college system, there is nothing particularly unusual about the role that student services plays at WITCC. It attempts to cope with the various mandates and pressures common to all similar institutions and does so with an increasingly limited resource base. Yet, a "new WITCC" needs a transformed communications center as well. With this in mind, the project team considered student services issues.

Project Activity

Project personnel met with Student Services Division management and staff on several occasions up until the retirement of the divisional administrator. The early input from the staff concerned a primary focus on constraints, the reasons why action is difficult or cannot be taken. Staff complained of federal reporting requirements which distort the true nature of student program achievement and job placement; of poor marketing and little support for their recruitment efforts; of antiquated and discriminatory attendance policies that hamper the progress of the nontraditional student; and a college-wide lack of "student-centeredness," i.e., student as employee, not a human being. There were, of course, a litany of other concerns raised. However, early discussions suggested a fairly low staff morale and a general lack of confidence about the future.

Given these concerns, project staff conducted an exercise in which the positive aspects of student-services related activities could be illustrated, along with specific issues that unit personnel believed needed some attention. Exhibit 10 displays these results.

A later discussion concerned how the college can better serve the "changing student body." These ideas revolved around such notions as college activities more appropriate to the nontraditional student; increasing faculty/staff involvement in the community; a name change for the college; free classes for senior citizens; and better care for campus buildings. In short, a much greater emphasis on accessibility and community image, two areas perceived as having the greatest deficiencies at the present time.

Exhibit 10

Comparisons of Contributions and Needs in Student Services

Contributions to Students	Needs
+ Career Learning Center	o Faculty/Staff Development
+ Individualized Learning Center	o A counseling department
+ Counseling-personal and vocational	o Stronger remedial education
+ Visiting College Transfer Counselors	o Targeted financial aids
+ Articulation Agreements	o More grant dollars
+ Course Equivalency Lists	o Symbolic things for nontraditional students (e.g., "ESL in Spanish")
+ Work-Study Opportunities	
+ Long-term $500 loans	o College bi-lingual capacity
+ Student Senate Welfare Committee	o More minority staff/faculty

Regarding areas of possible innovation in terms of student services activities in particular, division staff came up with a number of ideas to enhance the efficiency and availability of the college to the community. These include:

- Direct mail registration/recruitment
- Advertisements on computer bulletin boards
- Notices on public access TV
- Touch-tone telephone registration and information
- More videotape presentations/resources
- Expansion of FAX services/communications networks
- College offices in the mall/storefront locations
- College on-line library services available to community

In general, the student services staff felt at least somewhat optimistic that a few of their ideas might someday be implemented. Yet, the overriding feeling demonstrated was that "business as usual" would predominate.

Analysis

Interpretation of the reactions of student services personnel is difficult for several reasons. First, the group was undergoing a change in divisional leadership and experiencing uncertainty about the future. Further, budget and enrollment anxieties were at their peak when the unit's staff spoke with the project team. Finally, the time when the instructional staff were recognizing the opportunities involved in the change was late in the project year, when the instructional leadership emerged. There was, at this point, little involvement of the Student Services Division. Thus, in certain respects, some of the morale issues can be partially explained by the situation.

Yet, not all of their concerns can or should be so easily dismissed. The condition of the student services "hub" tells much about the college as a whole. Regardless of how inspiring activity in the instructional arena is, it cannot be truly effective until student services can be modernized, adapted, and transformed as well. And many of the ideas developed by the staff are on the right track and should be heeded. Whether all are accepted or not requires very careful thought at a number of levels. However, it must be recognized that the student services staff has an important prospective that deserves serious consideration. For this reason, the project staff devoted significant attention to the issues raised and this is reflected in the recommendations section.

COLLEGE-WIDE CONCERNS

A SUMMARY OF PROJECT ACTIVITY REGARDING COLLEGE-WIDE CONCERNS

The project culminated in a series of sessions under the rubric of "college-wide concerns" bringing together staff from all three instructional areas: vocational-technical (now "Occupational and Career Education"); continuing education (now "Community and Continuing Education"); and Arts and Sciences. Their mission was to establish common ground on the problems and to create a context for solutions. The following summarizes this process with the project team.

Project Activity

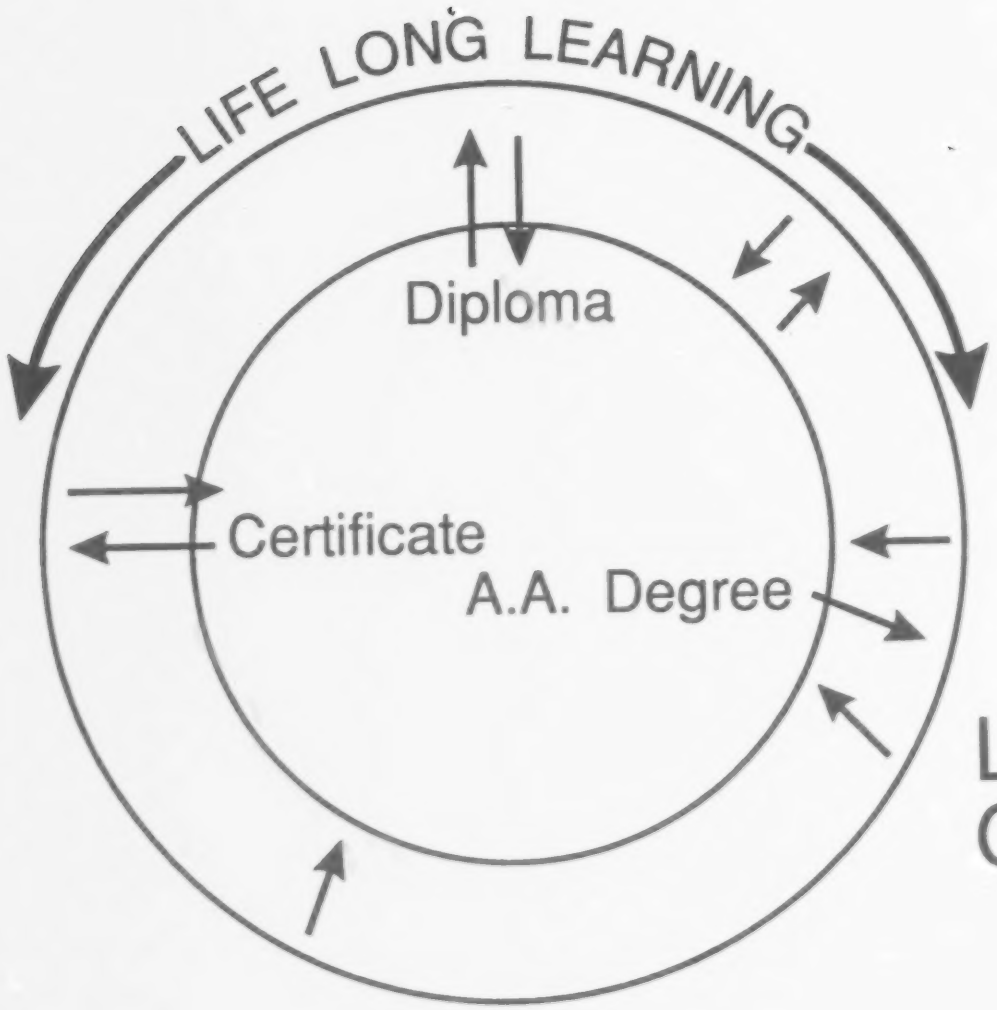
After meeting individually with the various instructional units, Dr. Dunker called together leaders from each of the three areas during the March visit. The group first determined, following the lead of Occupational and Career Education, that the ultimate "product" of the college is the associates' degree. All student involvement in the college, therefore, should be linked in some, however peripheral, way with this objective. As such, the prospective student "market" for the college is all community residents who have not yet accomplished the associate's degree, some 85 to 90 percent of the population. Further the group identified the "Lifelong Learning Continuum" (exhibit 11) as the appropriate model for this purpose.

To achieve this, it was determined that any distinctions between "credit" and "noncredit" course offerings were arbitrary in nature. Hence, they should contribute one to another, enabling the student to make progress toward the associates' degree no matter when she/he begins or how long it takes. The criteria for such cooperation is defined by exhibit 12.

Indeed, as the discussion progressed, it became obvious that what was being identified was a radical departure from the past and was indicative of a structural change being demanded as well. Defining the terms of this organizational shift, it was determined that all courses were one integrated curriculum package operating through the various divisions for management purposes. College administration and campus-wide management and service functions exists principally to serve instruction, not the reverse. Exhibit 13 graphically illustrates this concept.

Dealing next with implementation, the leadership group feeling greatly empowered and enthusiastic, recognized the need for the rest of the staff to be "converted" to this new perspective. The group then chose to identify means and mechanisms to accomplish this "missionary" work, emphasizing the development of new symbols to market the perspective internally. Exhibit 14 lists these conditions. With this approach, the group concluded the first series of meetings.

Exhibit 11



LEARNING CONTINUUM

Exhibit 12

Conditions for Working Together Better
Credit and Non-credit

1. Better communications
2. Acknowledge one another's expertise/paradigms
3. Define specific goals from mission statements
4. Define common definitions
5. Redefine market "pie"
6. Hold "good of WITCC" as highest goal
7. Have to use resources more effectively

Exhibit 12 (continued)

8. Change internal value system
9. Articulate courses between divisions or change divisions
10. Planning needs to occur in a context of a global community
11. Call for a shift in paradigm of external bureaucracies
12. Recognize primacy of educational delivery over support services
13. All faculty and staff must "buy-in" to new mission
14. Eliminate "finger-pointing"
15. Identify barriers to effectiveness
16. Define new measures of success, accomplishment, tied to new mission

Exhibit 13

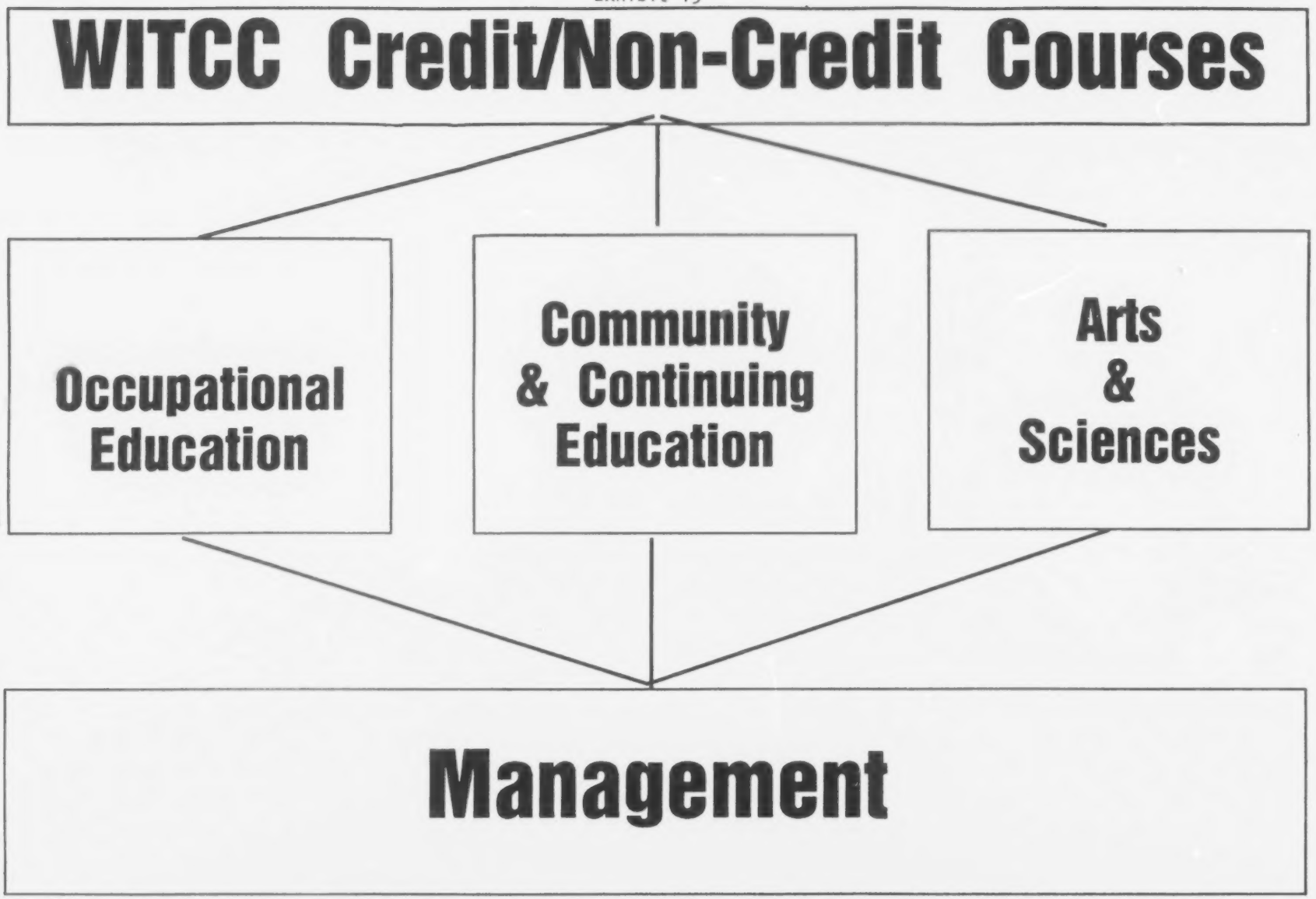

WITCC Credit/Non-Credit Courses
Occupational Education
Community & Continuing Education
Arts & Sciences
Management

Exhibit 14

Conversion of Others on Staff

1. Training, Inservice, etc.

2. Help them identify their own barriers

3. Include rest of staff in staff development process

4. Develop symbols of new mission, i.e. internal marketing

Approximately two months passed between the first and second series of project related meetings with instructional leaders of the college. In that interim, the group met several times on their own initiative. When the project team returned, the group had not only made considerable progress but also was well-prepared for more.

The first order of business, as determined by the staff, was a formalization of the communications process into a body with decision-making authority. Jokingly called the "Doug Commission," an affectionate tease on the individual who conceptualized the approach and chaired the ad hoc "working together better" committee, the group was actually constituted as a curriculum committee whereby course content, quality, articulation, and integration could be ensured (exhibit 15). The workscope and constitution of the committee was next considered (exhibit 16), followed by an organizational chart displaying the presence of the Curriculum Committee relative to other college units (exhibit 17). Clearly, it was intended by the instructional leaders that this group was to be the pre-eminent entity for instruction, save only the Executive Vice-President for Instruction and President of the College.

Upon determining the structure of curricular decision-making the committee considered the impact of all of this on the college. They first examined why the college was essential to the community (exhibit 18) and what it offers that is unique. Secondly, they explored what should the community understand about WITCC and what messages should be coming from the college (exhibit 19) with which it can organize its public information efforts to sharpen its image in the collective mind.

Further, the committee considered the vision of the "new WITCC," at the individual and collective levels (exhibit 20) and what is needed, as of today, to begin work on that mission (exhibit 21).

Finally, Dr. Dunker closed the project session with an acknowledgement to the group for its contribution. The admonition "Business as Usual = Death" (exhibit 22) emerged from Dr. Dunker's remarks as a useful reminder about the inevitability of change and the consequences of failing to grasp it. This meeting closed the formal interactive portion of the project.

Exhibit 15

Agreements in Principle — The Doug Commission

1. College needs a college-wide curriculum committee (instructional areas) to review and comment on curriculum matters in:
    a) New program/course development
    b) Program/course modification
    c) Program/course deactivation

2. Goal of curriculum committee is to ensure curriculum quality

3. Special consideration for non-credit

4. A curriculum guide needs to be developed

5. Place where curriculum committee fits

Exhibit 16

1. Communications

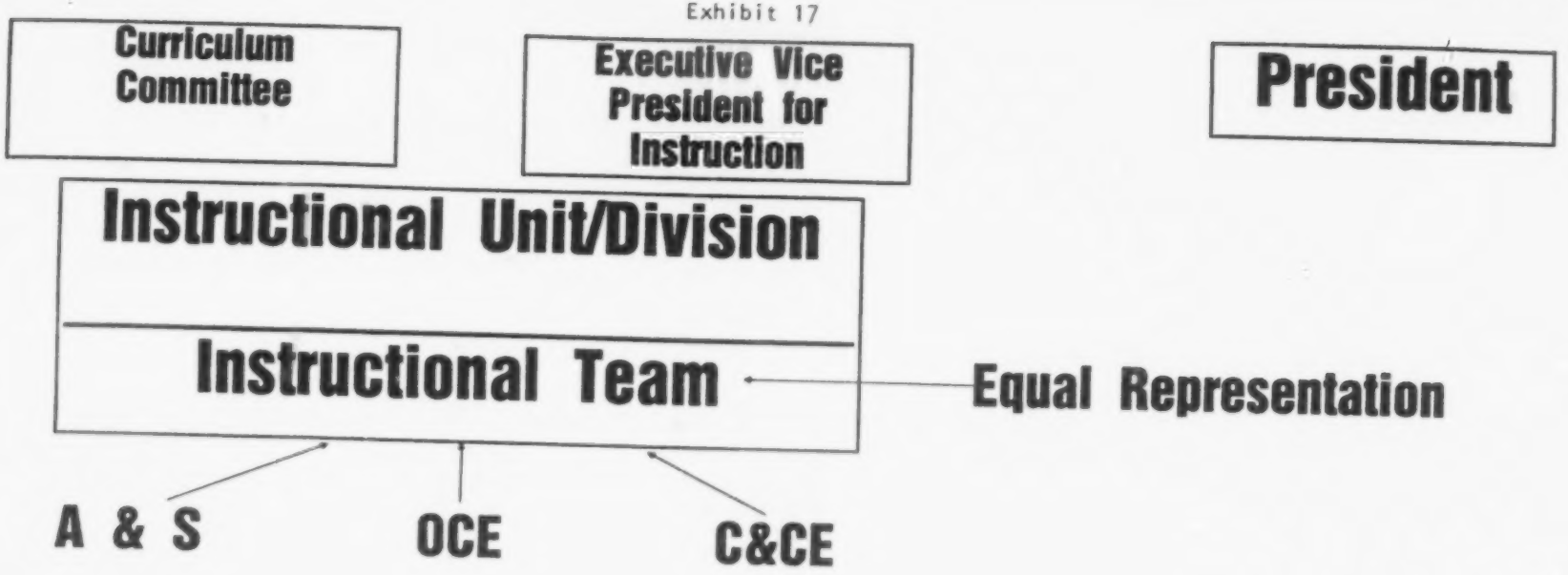
—Joint Meetings
should be formal, structured, agend-driven, etc.

—Task Force on Associates Degree
1. What's needed, i.e. student registrations, contexts, etc.
2. What's possible with resources, mission, time available.
3. Communicate definition of Associate Degree
4. Communicate process of developing degree proposals.

—"Market Pie" — criteria: mission and/or bodies

Planning Group: Doug Kanaly, Brenda Porter — Arts & Sciences;
Bob Rice, Gary Swaney — Community & Continuing Education;
Chuck Norby, JoAnn Erickson — Occupational Education

Exhibit 17



83

Questions to deal with

1. Titles
2. Location of cross-divisional programs
3. Location of all programs
4. Durations of committees (i.e. policy)

104

Management services

- Personnel
- Business
- Student Services
- Ancillary Staff

105

Exhibit 18

Why is WITCC essential?

1. Major source of entry-level employees
2. Handles problem cases
3. Unique capacity
4. Member of state-wide network
5. Flexible
6. High Quality/Cost
7. Economic development — community resource development
8. Transfer point/change agent

Exhibit 19

Message to community

1. Essential to community

2. "What you can do for you" as well as "What we can do for you"

3. "Best There Is" — Leadership

Exhibit 20

Mission—focus of "new" college

— Direction of intent, purpose

Individual —

Opportunities to improve quality of life through life-long learning
Consumer-owned and operated
Career development
Customized opportunities, benefits, learning

Aggregate —

Responsive to needs, e.g. economic development
Assimilation
Unification of community

Exhibit 21

ORGANIZATIONAL RESOURCES FOR LEADERS

1. Better telephone system
2. Support staff
3. Better products from instruction and management
4. Appropriate structural recognition of primacy of instruction
5. End the "Administrative Council"; reorganize into "Instructional" and "Management" functions
6. Provide quality orientation program for new staff
7. Equal access/resources for outlying areas
8. Cut bureaucracy (Let us get on with our business)
9. Provide quality management information

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Exhibit 22

BUSINESS AS USUAL = DEATH

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Analysis

"Business as Usual = Death" is a stark, fear-inspiring formulation of a very important notion: in this rapidly changing, increasingly global world, change is inevitable. Prosperity, and even life itself, depends on a successful adaptation to it.

The problems facing Western Iowa Tech Community College are obvious. Enrollments have been dropping over a number of years with this past year being a possible, if only temporary interruption. The post-high school students around whom the college has built its program are less and less a factor in the college's planning and in the realities of teh Siouxland community. And while recognizing the need to adapt to the needs of the adult, nontraditional student, the college has thus far been very slow. As this occurs on campus, the surrounding community has been generally considered to be in a decade-long economic slump. While some signs of activity have been apparent lately, jobs which may result from new investment dollars will tend not to be in the manufacturing and trades jobs upon which the college was built. The college and its programs must change.

The college has a choice, the same one identified in the 1989 Phase I report: the college can decline, perhaps even faster than Grossman and Gyuro predicted, due to changing circumstances. Or it can restructure, reprioritize, remold its image, and act. This project, one hopes, has served as a stimulus toward that latter end.

Clearly, enormous progress has been made over the course of this year and because of this those involved should feel very proud. In order to support this movement, the project team has defined an extensive set of recommendations that it feels confident will support and enhance the results of the project outcomes to date. These suggestions are discussed in the next section.

RECOMMENDATIONS

RECOMMENDATIONS/NEW DIRECTIONS FOR STRATEGIC PLANNING AT WESTERN IOWA TECH COMMUNITY COLLEGE

Based on the input of staff and counsel with the college administration, the following recommendations have emerged by consensus of the respective units of the college. Points in each of the five issue areas developed in the project are discussed, followed by recommendations for consideration of the college community as a whole.

Occupational and Career Education

Recommendation 1--

The present practice of promoting the inclusion of everyone with responsibilities for Occupational and Career Education as active participants in program planning and assessment should be continued and strengthened whenever possible and feasible.

When administrators and staff approach the task of program planning or assessment as equals it promotes a sense of "ownership" in the outcomes of their efforts. Even more importantly, it is more likely to make the best use of the wealth of inhouse expertise and talent than is a top-down planning or assessment process. Occupational and Career Education administrators and staff have adopted such a practice and it appears to be working effectively.

Recommendation 2--

Administrators and staff (with assistance from persons external to the college) should develop a "vision statement" of what Occupational and Career Education at WITCC should be in the year 2000, incorporating both local employment trends and new developments in technology.

The availability of such a statement will provide a basis for program direction and improvement efforts to be proactive rather than reactive in nature. It is assumed here that a statement of vision will not be a fixed one. It will need to be periodically reviewed and changed in the light of changing local economic, demographic and employment conditions, broader state concerns for the direction and funding of community colleges, and the like. It is suggested that the vision include occupational training in a global marketplace, emphasize the employment skills required in the present and the future (i.e., the "knowledge worker") and more clearly integrate advanced academic skills into technical curricula. This vision should not only represent the new college consensus, but should also be shared and clearly understood by all students in occupational and career programs.

Recommendation 3--

The vision statement should be reviewed at least every three years.

The review of the vision statement would need to consider changing labor market conditions, new or continuing directions for community colleges in Iowa, resources available to WITCC for occupational education, and the like. Once a revised statement is approved by staff and administrators, it should serve as an important base for decisions regarding new course/program initiatives, and decisions about retaining or improving programs.

COMMUNITY AND CONTINUING EDUCATION

Recommendation 4--

The Community and Continuing Education Division should be recognized as having a central responsibility for marketing the college and its programs. This emphasis should be embellished and expanded through its vast array and network of community resources.

Insofar as the newly developed mission statement of the Community and Continuing Education Division is broad and visionary, encompassing work done in both credit and non-credit areas, it should have not only the requirement to assist student movement on the continuum of learning, it should also control the resources and receive "credit" when students choose to come to WITCC. Insofar as data show that the vast majority of the future students of the college will come from the ranks of adults, their recruitment will be of a fundamentally different character than with more traditional students. As such, Community and Continuing Education will tend to interface with these prospective students to a far greater extent than will others. It makes the greatest sense, therefore, to formally designate this division with a formal recruitment and student marketing role, accompanied with appropriate resources to do the job.

Recommendation 5--

The college administration should begin planning the development of a college conference center to accommodate a growing area of continuing education activity.

Continuing education is involved in direct services to the general community. Many times, these services involve drawing together persons with special interests or needs for particular types of information in a conference setting. These efforts often impinge upon existing college space or involve payment to local private vendors. The success of the division and its future plans may well justify the construction of a college conference center that can accommodate this growing need as well as those of other units of the college. These facilities could house the tele- and audio-networking capability of the college. This would greatly expand the capacity of the division and the college as a whole, as well as providing potential revenue base at least capable of offsetting its costs.

Recommendation 6--

Develop a "community resource handbook" for educational and other services for Siouxland as a whole to be utilized as a community development resource.

Throughout the work of this project, community education staff referred to needs in both the information collection area, as well as improvement in its ability to disseminate it. Further, they noted that the college's image and presence needed to be improved, not only within the service area but outside of it as well, in the tri-state Siouxland region. One

way in which it can accomplish all of these goals at once is to develop an education/ employment/community service resource guide for individuals in the entire area. This could be done in hardcopy, on-line, and in disk formats. Besides the revenue that would accrue, it would serve to establish the linkage between WITCC and the entire community, making it a resource for everyone in the greater Sioux City area.

Recommendation 7--

The staffing pattern of the Community and Continuing Education Division should be embellished and enhanced to better reflect its new mission and purpose.

The Community and Continuing Education Division should be positioned in the structure of the college to reflect its stature and importance as, in effect, the marketing and recruitment arm of WITCC. As it is not simply an instructional unit any longer, and will be even less so if the above recommendations are adopted, it should not be principally regarded as one either. It may be to the college's advantage to establish it as a unit of the college administration, given the breadth of its purposes and mission.

ARTS AND SCIENCES

Recommendation 8--

The Arts and Sciences Unit should be elevated to the status of an instructional division co-equal with Occupational and Career Education.

Growth in the arts and sciences area has been characterized by well-intended effort and significant, albeit slow, progress. Although all of the recommendations pertinent to the arts and sciences are designed to enhance and speed this development, one of its limitations has been an historic lack of visibility and unique identity within the college structure. Although the size of the effort at present is not in any way equal that of other instructional units of the college, the programmatic priority is such that is needs to receive the visibility to reflect its degree of emphasis and the leadership to develop it at the pace of the internal and external demand. Further, it is clearly indicated that a leadership position equivalent to other senior college staff be created in order to reflect these considerations.

Recommendation 9--

Arts and sciences should be given a very high priority in the allocation of resources at the college over the next 3 - 5 years.

Fortunately, Title III will aid substantially in handling the start up costs of implementing a comprehensive arts and sciences program. Further, even though the project team has suggested cost-effective means of implementation of arts and sciences programs in the past, these should be regarded as only minimum measures for both cost and program development. As the development of these programs needs consideration now, so should the planning for recruitment of permanent faculty commence soon, despite what the short-term college-wide revenue picture may suggest.

However, its presence in Title III is not, by itself, sufficient. Its success will require a continued commitment on the part of the college administration, reflected by its emphasis in the budget.

Recommendation 10--

Coordinated programs between arts and sciences and community education should be developed in order to accommodate the needs of local industry for workplace literacy and enhanced communications skills training.

The future of industry in the Siouxland community and that of the college are intertwined. Accordingly, the demographic realities with which each must deal are similar. Industry will have increasing need for workers better trained in literacy, numeracy, and communications. This is also an area in which WITCC can provide service and support.

This support can increase revenue for both entities, resulting in many positive benefits including further allaying some of the costs of implementing the arts and science programs.

RESOURCE DEVELOPMENT

Recommendation 11--

The newly appointed director for Resource Development should prepare a resource development plan that includes strategies, implementing activities, timelines for them and estimated resources to be generated by each strategy.

The resource development plan should be reviewed by the President of the college and then revised as needed. Following this review, it is recommended that a panel be convened to review the plan and to suggest how the plan might be improved. The panel might include WITCC faculty and staff persons as well as persons from the community at large.

The strategy should include:

- Specific plans for the development of the Foundation
- Linkages between the public information/relations and resource development efforts of WITCC
- Community involvement goals over a defined time period
- Revenue goals over a defined time period
- Identification of areas of potential program development through project/grant development.

Implicit in the above is the development of assessment instruments to evaluate progress.

The project team believes that this area should have a very high priority at the college and should target 1995 as an end date for the plan. The project team has determined that a goal of 25 percent of the total college budget can be supported through contracts, grants, and Foundation contributions by this date. Further, the Foundation can have a total membership equal to 5 percent of the Sioux City SMSA (approximately 5,500 people) by 1995.

STUDENT SERVICES

Recommendation 12--

Student advising and counseling facilities and services should be expanded to better serve the diversity of students that now enroll in the college and which can be expected in the future.

The nature of the student body at WITCC, now and certainly in the future, will involve increasing numbers of nontraditional students. These will involve new opportunities for the college and also involve new burdens. As their life situations are different from those of high school students, so will be the resources required to support them. Accordingly, there is a clear need for counseling, both individual and career services, to be expanded such that students truly have access to the wealth of opportunities they may receive in the new WITCC. Included in these services should be a college-wide pre-assessment of all students enrolled in courses for credit.

Recommendation 13--

Offices of WITCC should be opened in areas of high community access throughout the service area, particularly in more rural areas.

Sioux City, as in other communities, conducts much of its business, both commerce and social, in local shopping malls and along central traffic corridors. Thus, shopping malls, for example, serve as community centers as much as markets for goods. Likewise, "main streets" serve as meeting places in smaller communities. Accordingly, WITCC could very cost-effectively open offices or even booths, in which its programs would be made available, registration arranged, and students enrolled throughout the service area. While this would provide the greatest convenience during the fall registration period, it could also serve to be an on-going remainder to the communities it serves of the presence of WITCC, its importance, and the opportunity its programming represents.

COLLEGE-WIDE RECOMMENDATIONS

Recommendation 14--

The name of the college should be changed to better recognize its changed mission and goals.

This suggestion has emerged repeatedly over the years. Given the degree to which the college has changed just over the past year, it is indicated now more than ever. It no longer serves just Western Iowa, and it no longer limits itself to "Tech." Accordingly, this must change. A repeated suggestion made by faculty, staff, and members of the community concerns renaming the college in honor of an individual closely identified with WITCC since its inception, perhaps as a part with the college's 25th anniversary celebration. This name might also be used in conjunction with a geographical reference more broadly conceived than "western Iowa." The project team, of course, has no firm opinion on this matter, recognizing it as wholly within the realm of college community. It does, however, suggest that serious consideration be given to this point in short order.

Recommendation 15--

The college should permit the new president considerable leeway in reorganizing the staff for greatest compatibility with a new leadership style.

The retirement of Dr. Kiser closes a chapter of birth, growth, and maturity at WITCC. While he cannot truly be replaced, he will be succeeded by an individual that will want to continue many things, but possibly in a style and with areas of interest and expertise that are different from those of Dr. Kiser. Accordingly, both the staff and the board should anticipate that it is appropriate for a reorganization of the staff and administration to occur.

Recommendation 16--

Credit and non-credit courses should be articulated throughout the college curriculum.

The future of the college clearly rests on its ability to appeal to the community as an asset that is flexible and responsive to the great variety of the needs of its members. One highly visible and extremely valuable change that it could make would be to reconstruct all non-credit courses such that they could, in some way, contribute directly into a degree, diploma, or certificate program at the college. Indeed, the project staff feels so strongly about this that it would suggest that the ability of any non-credit course or program to be "bridged" to the credit curriculum be a major criteria for its inception.

Recommendation 17--

All instructional programs at the college should be assessed formally and on a predetermined schedule for program improvement purposes.

College staff and administrators are familiar with on-site assessment procedures for many educational programs. It is therefore not necessary to discuss or describe them here. What is important is that any formal process be perceived by administrators and staff as proactive and constructive in purpose rather than reactive and fault-finding in nature.

Recommendation 18--

The college might wish to also consider implementing a performance-based process for the assessment of all instructional programs.

WITCC staff and administrators may not be familiar with a performance-based assessment process that relies on agreed upon criteria (performance indicators) and criterion or performance measures that are quantitative in nature. Such a process would make good use of the college's management information system currently under a major revision.

Recommendation 19--

Increased emphasis should be placed on the enrollment and support of "special needs/populations" individuals such as minority, disabled, and bilingual students.

The demographic trends within the community at large and specific to the college indicate an increase in the number of prospective students in non-traditional categories. Effectively serving this "market" requires more than simply nominal services directed toward them. The college needs to invest in the counseling, developmental education, and faculty resources to assist these students to both effectively cope with college life and to realistically pursue advanced degrees. Specifically, the development of language lab and a bilingual capability in the college would assist those dealing with language barriers, as would a larger portion of minority faculty and disabled services assist in those areas. In sum, for the college to truthfully and effectively portray the college as being accessible to the entire community, it must be able to show concrete actions that ensure such accessibility.

Recommendation 20--

As a comprehensive community college, WITCC should ensure that every student, regardless of entry-point or program, has the opportunity to achieve an associates' degree, its principal product.

WITCC is a community college. Its promise to the community is as guarantor and provider of access to higher education. As such, while it indeed can serve those narrowly interested in either purely occupational or recreational pursuits, it is principally a resource for the educational progress of the community. In this respect, its "market niche" is that set of individuals that have not yet completed the baccalaureate degree, some 80-85 percent of the local population. Its first job, then, is the granting of associates' degrees. **This is not to say that the college should discontinue diploma and certificate programs**. Rather, these can be viewed as points of individual progress, irrespective of whether the pursuit is in the vocational-technical or arts and sciences areas. Therefore, it is of great importance to ensure that all courses and programs represent some point on a continuum toward the student's accomplishment of their long-term degree goal.

Further, it is critical that the sequence of courses and programs leading to the associates' degree be made clear, making those who are or have done coursework at the college be seen as a market to be aggressively recruited. Finally, the college should foster the development of a common core of courses across divisional lines that all degree-seeking students will take; arranged at convenient times, places, and styles designed to accommodate the adult student that represents the future of the college.

Once again, the project team feels strongly that all college courses, credit or non-credit, be articulated such that they encourage a student to continue ultimately toward the degree. Indeed, it would further suggest that the only exceptions to this principle occur in cases in which the marginal benefits to both the college and the community are very compelling, enough so that it is becomes purposeful to distract the college from its main mission. The project team suggests that instances of this will be rare indeed.

APPENDIX

THE SIOUXLAND EMPLOYMENT CONTEXT
—AN OVERVIEW—

The current business climate in Siouxland shows a relatively constant unemployment rate of approximately 4.2 percent for 1989 and 1990 with a substantial increase in the number of employed persons working part-time.

Employment statistics indicate a difficult recovery for Iowa. Iowa is experiencing a 54-month employment decline. Statistical data as well as the generally held consensus of community and business individuals who were interviewed is that Iowa is in an extended downturn in employment. The Siouxland area has, however, shown a consistent recovery in employment since 1982 or 1983. Nevertheless, the local economy continues to be "soft" since wages are relatively low (i.e., median hourly wage is about seven dollars. Employment increases are primary in the service sector which is likely to be adversely affected by any recession. Traditionally, service sector employers pay very low wages, and there is a growing tendency in the service sector to employ persons on a part-time basis.

There is a process of restructuring of the workplace, regionally. Jobs in manufacturing and construction have noticeably declined after 1982. Experiences by the local Job Services office indicate that employment in manufacturing and construction continues to be stable with no indication of any substantial change unless there is a downturn in the economy. Higher paid manufacturing incomes are decreasing and there is slow growth in the service industries. Reasons for such slow growth include: slow population growth, slow growth in personal income, and constrained expansion of business services due to shrinkage of the manufacturing base.

Census figures indicate an increase in the single adult population and in particular of minority persons. Increases in the workforce will, in large part, be made up of minorities and women. Many of these persons will require additional literacy and math skills if they are to obtain employment.These workers may constitute an increase in the supply of unskilled workers and thereby further depress average hourly wages paid by employers.

Many of the job opportunities that are potential ones for the region will require workers that have more than minimum communication and reasoning skills. Many of these persons may also need an arts and sciences background including economic education. A number of the employers who were interviewed by project team members underscored that there is a crisis situation with regard to the inadequate level of general education attainment by many employed persons.

Aggressive outreach activities by the business community, the geographic location and the good infrastructure of highway, rail, barge and air combined with a better than adequate educational and medical base can provide the area with good drawing cards for business in-migration. The midwestern work ethic and the labor pool of underemployed skilled and

unskilled workers constitute a low wage environment pleasing to many businesses. In addition, South Dakota offers a favorable climate for business in-migration or expansion through no corporate income or personal property tax . This business incentive creates benefits for the entire metropolitan area.

There is activity locally (e.g., the Siouxland Initiative) to import new business including small industrial and manufacturing firms, electrical assembly operations, insurance services, credit card/financial services, health care, and food processing. To the extent that the Siouxland initiative succeeds, it would mean new jobs but it is uncertain how this would affect the need for institutional-based or employer-based training.

A 216 acre business park (the Dakota Dunes Project), a project of Midwest Energy Company, is being marketed as one that will attract highly technical and research facilities. To the extent that this project succeeds, the entire area will benefit through an increased payroll of professional level salaries and through construction of plants, homes, recreational facilities and service businesses. The success of the Dakota Dunes Project could also lead to a regional transportation and manufacturing hub since Omaha, Lincoln, Des Moines, Sioux Falls, Kansas City and Minneapolis are within a 300-mile radius.

There exists a growing trend to push the provision of medical services out of St. Luke and Marion Hospitals and into the home, doctors' offices, social welfare program providers, and other personnel. At the current time the labor pool of medical personnel will not satisfy the increasing demands that are likely to come about for off-site medical services.

Agricultural-based firms are expected to increase vertical integration of the packaging process. This may require an undetermined number of clerical, office, and computer- trained personnel as well as meat cutters, transportation workers, marketers, and sales persons.

In labor markets such as Soubxland, employers tend to reduce the number of full-time workers to a minimum. This kind of environment puts pressures on employees to maintain and extend existing skills or gain new ones in order to compete for full-time employment.

CRITERIA FOR IMPLEMENTING NEW PROGRAMS

ACCEPT CRITERIA			CRITERIA
YES	NO	UNDECIDED	
—	—	—	1. CURRENT DEMAND FOR NEW WORKERS IN OCCUPATION(S) FOR WHICH TRAINING IS BEING CONSIDERED
—	—	—	2. FUTURE DEMAND FOR NEW WORKERS IN OCCUPATION(S) FOR WHICH TRAINING IS BEING CONSIDERED
—	—	—	3. RATE OF GROWTH OF OCCUPATION(S) FOR WHICH TRAINING IS BEING CONSIDERED
—	—	—	4. EMPLOYERS' REQUESTS FOR TRAINED WORKERS IN OCCUPATION(S) FOR WHICH TRAINING IS BEING CONSIDERED
—	—	—	5. TYPICAL ENTRANCE WAGE
—	—	—	6. TYPICAL WAGE AFTER 1 YEAR OF EMPLOYMENT
—	—	—	7. DEGREE OF EMPLOYMENT STABILITY IN OCCUPATION(S) FOR WHICH TRAINING IS BEING CONSIDERED [LAYOFF HIST.; FT vs. PT EMPLOY]
—	—	—	8. DEGREE TO WHICH PRINCIPLES OF AFFIRMATIVE ACTION ARE PRACTICED BY EMPLOYERS OF GRADUATES LOCALLY AND REGIONALLY
—	—	—	9. AVAILABILITY OF REGULAR FACULTY FOR THE PROPOSED PROGRAM
—	—	—	10. AVAILABILITY OF REGULAR FACULTY FOR THE PROPOSED PROGRAM
—	—	—	11. AVAILABILITY OF ADJUNCT FACULTY FOR THE PROPOSED PROGRAM
—	—	—	12. AVAILABILITY OF COMPETENCY-BASED CURRICULUM MATERIALS
—	—	—	13. ADEQUACY OF PRESENT FACILITIES TO HOUSE PROPOSED PROGRAM
—	—	—	14. EASE OF ACCOMMODATING EDUCATIONALLY DISADVANTAGED
—	—	—	15. EASE OF ACCOMMODATING PHYSICALLY HANDICAPPED
—	—	—	16. EXTENT OF STUDENT INTEREST IN THE PROPOSED PROGRAM
—	—	—	17. EXTENT OF EMPLOYER INTEREST IN PROPOSED PROGRAM
—	—	—	18. AVAILABILITY OF OTHER SIMILAR TRAINING OPPORTUNITIES, LOCALLY
—	—	—	19. LIKELY EXTENT OF START-UP COSTS FOR THE PROPOSED PROGRAM
—	—	—	20. LIKELY EXTENT OF RECURRENT (OPERATING) COSTS FOR THE PROPOSED PROGRAM

CRITERIA FOR CONTINUING PROGRAMS

ACCEPT CRITERIA YES	NO	UNDECIDED	*CRITERIA*
—	—	—	1. CURRENT DEMAND FOR NEW WORKERS IN OCCUPATIONS FOR WHICH TRAINING IS OFFERED
—	—	—	2. FUTURE DEMAND FOR NEW WORKERS IN OCCUPATIONS FOR WHICH TRAINING IS OFFERED
—	—	—	3. RATE OF GROWTH OF OCCUPATIONS LOCALLY REGIONALLY
—	—	—	4. EMPLOYERS' REQUESTS FOR TRAINED WORKERS IN OCCUPATIONS FOR WHICH TRAINING IS OFFERED
—	—	—	5. DEGREE OF EMPLOYMENT STABILITY IN ASSESSED OCCUPATIONS
—	—	—	6. DEGREE TO WHICH PRINCIPLES OF AFFIRMATIVE ACTION ARE PRACTICED BY LOCALLY-BASED EMPLOYERS OF GRADUATES
—	—	—	7. AVAILABILITY OF REGULAR FACULTY
—	—	—	8. NEED TO INCREASE NUMBER OF REGULAR FACULTY
—	—	—	9. AVAILABILITY OF ADJUNCT FACULTY
—	—	—	10. AVAILABILITY OF COMPETENCY-BASED CURRICULUM MATERIALS
—	—	—	11. ADEQUACY OF PRESENT FACILITIES
—	—	—	12. EASE OF ACCOMMODATING EDUCATIONALLY DISADVANTAGED
—	—	—	13. EASE OF ACCOMMODATING PHYSICALLY HANDICAPPED
—	—	—	14. EXTENT OF STUDENT INTEREST
—	—	—	15. EXTENT OF EMPLOYER INTEREST
—	—	—	16. AVAILABILITY OF OTHER TRAINING OPPORTUNITIES, LOCALLY
—	—	—	17. EXTENT OF START-UP COSTS
—	—	—	18. EXTENT OF RECURRENT (OPERATING) COSTS

ACCEPT CRITERIA			CRITERIA
YES	NO	UNDECIDED	
___	___	___	19. EXTENT OF GRADUATES TO PROGRAM CAPACITY
___	___	___	20. EXTENT OF STUDENT DROPOUT FROM PROGRAM DURING SCHOOL YEAR
___	___	___	21. THE EXTENT OF OPENING ENROLLMENT TO FIRST YEAR PROGRAM CAPACITY
___	___	___	22. MEDIAN ENTRY LEVEL WAGE FOR OCCUPATION
___	___	___	23., MEDIAN WAGE AFTER 1 YEAR OF EMPLOYMENT

WORKSHOP OUTLINE

Overview of Workshop

A. Purposes of workshop ---Bob Dunker

B. Review of previous workshop ---Harold Starr

C. Overview of workshop tasks and schedule---Bob Dunker and Harold Starr

The Need for Planning New Programs or Continuing Existing ones---Workshop.Session 1

What should be the nature of vocational/technical programming at WITCC?

Areas of Concern

1. Employment Context
2. Employers' Needs for Trained Workers
3. Peoples' Needs for Job Skills
4. System Capacity to Meet Employers' and Peoples' Needs for Training

Questions for group discussion:

- o Are there or will there likely be short-and/or long-term needs for trained workers in the Siouxland region, state or larger region; and if there are such needs, how many persons are or will be needed and with what kinds of skills?
- o Is institutionally-based vocational/technical education the only or the best alternative for meeting demands for identified skilled labor needs given the economic, demographic and social characteristics of Siouxland?
- o Which employment needs can best be met by offering institutionally-based vocational/technical education programs and what is the rationale for them?
- o Should special services try to compensate for a lack of employability skills of potential students or should programs be selected that make the least demands on those with employability skills handicaps?

- Are there adequate numbers of persons who are likely to need, desire, and profit from vocational/technical education programs to warrant continuing existing programs or implementing new programs?

- What practices are or should be used to enroll students in WITCC and what is their rationale?

- Should the benefits of vocational/technical education programs be to enable completers to be competitive in the labor market and/or guarantee them employment?

- Should *any* vocational/technical programs be offered on a "permanent" basis, or should all programs be selected around a finite period of time subject to renewal based on continuing need, or should there be a mix? What is the rationale for selecting one of these three options?

- What do you perceive to be the difference between a "vocational" program and a "technical" program?

- What should be the balance of vocational as opposed to technical programs at WITCC?

- What new vocational/technical programs should be offered at WITCC and which existing ones should be modified or deleted on the basis of the discussions today? Why?

- What are the major constraints to moving forward with a new vision for vocational/technical education at WITCC and what strategies and tactics should be used to address them?

- What other questions need to be asked and what kinds of additional information would be helpful in answering the preceding questions?

How to Select New Programs and Improve or Plan to Terminate Ongoing Ones---Session 2

The Current Situation

- What methods are currently used for evaluating division offerings and how helpful are they for selecting new programs and improving or terminating ongoing ones?

- Are better methods needed and if so what might they be?

- What is the likelihood of new planning and evaluation methods being accepted by staff?

- Should planning and evaluation of vocational/technical education programs be more databased?

- If a more databased approach is advisable, when should it be implemented and what actions or activities will need to be in place to ensure its acceptance?

Alternative Planning and Evaluation Methods

Two program planning and evaluation methods are described below. These methods are described in a series of publications authored by Starr et. al.[1-6] The first method is the *Fatal Flaw Analysis Method*. It is useful for selecting among a set of candidate occupations (for which programs can be developed) the one(s) that best meet a set of selection criteria. The second method, and one that can be used for both program planning and evaluation, is the *Feature Analysis Method*. Each of these two methods is described below.

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[1]H. Starr, H. Merz, and G. Zahniser. **Using Labor Market Information for Vocational Planning.** Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1982.

[2]H. Starr. **The Development of a Practical Model for Planning Vocational Training. A Post-Seminar Report.** Singapore, Republic of Singapore: The Vocational and Industrial Training Board, 1984.

[3]H. Starr. **The Development of a Practical Model for Planning Vocational Training.** In *Management Information System for Vocational Education and Training--Final Report (ASEAN-Australian Development Education Project--Educational Management Information System).* Singapore, Republic of Singapore: The Vocational and Industrial Training Board, 1984.

[4]H. Starr. **Increasing Vocational Education Program Relevance: A Data-Based Approach.** Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1987.

[5]H. Starr. **The Evaluation Index.** Columbus: The National Center for Research in Vocational Education,The Ohio State University, 1988.

[6]G. Grossman and H. Starr. **An Evaluation Method and Context Statement for Evaluating and Planning Job Preparation Courses**Cleveland City School District, Cleveland Ohio). In Progress.

The Fatal Flaw Analysis Method

The fatal flaw analysis method is useful mainly when there is a short timeframe for conducting program planning and it is possible to select criteria that lend themselves to quantification.

In the context of vocational/technical education program planning and evaluation, the fatal flaw analysis method encompasses four steps:[1]

1. Selection criteria are established for selecting among candidate occupations the one(s) for which a vocational/technical program will be implemented. The selection criteria which are established are judgmentally derived from a specific training and employment problem (e.g., the need for displaced workers to be retrained for other kinds of substantial gainful employment).

2. A pass/fail discriminatory value is established for each selection criterion.

3. Candidate occupations are identified and the selection criteria and the discriminatory (pass/fail) values are applied to each of them.

4. An occupation is selected for program development and implementation because it meets all of the valued selection criteria (i.e., it has no "fatal flaws"). An optional outcome is to select more than one occupation as the basis for program planning if more than one occupation has no more than a predetermined number of "fatal flaws."

If too many "winners" result from the application of the selection criteria, either more criteria need to be developed or the discriminatory values assigned to selection criteria might need to be made more stringent. If there are no "winners," the selection criteria and/or their discriminating values need to be made less stringent.

Table 1 depicts a sample of criteria for selecting among occupations as well as their accompanying discriminatory values. The selection criteria in this example might be appropriate when the planning problem is one of determining what programs might be most suitable for implementation to serve dislocated workers. Table 2 depicts the application of the criteria and discriminatory values to a set of candidate occupations.

TABLE 1

Selecting Occupations by the Fatal flaw Analysis Technique
---Selection Criteria and Discriminatory Values---

Criteria	Value If:
1. Net openings for workers in each occupation	More than 50 average annual
2. Growth trends in job openings	Positive
3. Entry wages	Average or above for region
4. Start-up costs for programs to train for occupation	Average or lower for region
5. Restrictions on hiring	No restrictive patterns by sex or race in region
6. Location of Employment	Within 35 mile radius of City

TABLE 2

Selecting Occupations by the Fatal Flaw Analysis Method
---Examining Candidate Occupations and Selecting a Winner---

Criteria

	Net Job opens	growth trends	entry wages	start-up costs	hiring re-stricts	location-	*Winners*
Occupations							
Auto Tech	x	x	x	x	x	x	yes*
Auto Mechanic	x	x	--	x	x	x	
Aircraft Mechanic	x	x	x	--	--	x	
LPN	--	x	--	x	x	x	
Machine Op	x	--	--	x	x	--	

*If all six factors are to be valued. If five valued factors are acceptable, then Auto Mechanic would also be a "winner."

The Feature Analysis Method

The feature analysis method like that of the fatal flaw method is a databased approach to vocational/technical education program planning. The feature analysis method is, however, more complex and time-consuming to formulate and implement. Also, in this method, there are no "winners" in the sense described above. Rather, occupations are *ranked* with respect to relative desirability for program development and implementation or *ranked* with respect to relative need for program improvement. This method can be extended to enable users to differentially and explicitly value (weight) evaluation and planning criteria. Lastly, regression analysis and correlation analysis can be applied to determine which criteria best predict program desirability or to relate such things as educational inputs or processes to outputs and outcomes.The feature analysis method may use the same pass/fail data normalizing technique as does the fatal flaw method or a data normalizing technique comprised of an arbitrary range of discriminating values (i.e., one to four or zero to five) for each criterion. An example of the latter normalizing technique is depicted in Exhibit 2.

The feature analysis method for planning and evaluating vocational/technical programs includes three major components: (1) an information selection process, (2) a scoring process and (3) a ranking process.

Information selection. The information selection process involves the systematic identification of selection criteria for program planning or performance categories and performance indicators for program evaluation (see exhibits 1 and 2). The information selection framework is used that is organized around five components (i.e., the context for vocational education, the educational process, program output, program outcomes, and program benefits). As an example for the educational process component of the framework, *instructional design* may be chosen as an information category and *the extent to which occupational preparation program curriculum is competency based* may become a performance indicator.

One or more sets of performance measures are then formulated for each performance indicator. In the case of instructional design one such measure might be that "*The curriculum is fully competency based.*" Another measure might be that "The curriculum is partially competency based and there is evidence that it will be fully competency based within the next school year."

The bulleted statements listed in exhibit 1represent potential indicators of relative performance by which to judge the quality of vocational/technical education programs or courses. (e.g., the closer a program or course comes to meeting sex and minority goals set by the college or department with regard to enrollment the better it has performed; the less costly a course is to operate within its career cluster the better it has performed).

Scoring. Each of the measures comprising a set of measures for a particular performance indicator is assigned a "normalized" score. This procedure permits a solution to a common evaluation problem: how to compare and deal with seemingly dissimilar kinds of useful evaluative data such as determining which of two kinds of job preparation programs is most in need of improvement if offering A has a 85 percent completion rate and a 50 percent placement rate and offering B has a 91 percent completion rate and a 63 percent placement rate.

Ranking. The ranking process includes several steps. First , users systematically value (weight) the different components of the information framework which in turn results in differential weighting for selection criteria or performance indicators. This step is optional. Second, scores (weighted or raw depending on the option selected) for all of the selection criteria or performance indicators are added. Third, the occupations or programs are ranked in accordance with the total scores each has attained.

In the proposed evaluation, school administrators can review the relative program rankings and use this information as they attempt to determine those programs which are adequate for meeting student needs, those which require improvement, and those which after additional more intensive review may be considered inappropriate for continuation. The proposed method is intended to compliment rather than replace traditional subjective/observational methods of evaluating vocational education programs.

Exhibit 1--Performance indicators

The bulleted statements listed in exhibit 1represent potential indicators of relative performance by which to judge the quality of vocational/technical education programs or courses. (e.g., the closer a program or course comes to meeting sex and minority goals set by the college or department with regard to enrollment the better it has performed; the less costly a course is to operate within its career cluster the better it has performed).

PERFORMANCE INDICATORS

- The extent to which there was sex equity in enrollments in vocational/technical courses.
- The extent to which there was equity in enrollment of minority students in vocational/technical education courses.
- Relative costs associated with operating vocational/technical courses.
- The extent to which vocational/technical course curricula are competency based.
- The extent of opening enrollment to first year course capacity.
- The extent of graduates to course capacity

Exhibit 2--A performance indicator and its associated performance measures and scores

Performance Indicator: ***Relative costs associated with operating technical/vocational courses.***

Performance Measure and Scores:

[4] Compared with the other courses in its career cluster, this course had the lowest per-student operating cost.

[3] In its career cluster, this course ranked below the median with regard to per-student operating cost.

[2] In its career cluster, this course ranked at or above the median with regard to per-student operating cost.

[1] Compared with the other courses in its career cluster,this course had the highest per-student operating cost .

[0] No or insufficient data are available for this course.

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